

DIFFERENCES IN THE COMPREHENSIBILITY OF TESTIMONY :
A COMPARATIVE STUDY OF MAGISTRATES' CREDIBILITY
JUDGEMENTS, WITNESSES' ETHNICITY AND COURT ROLE.

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DECLARATION

I declare that this thesis, except where otherwise indicated in the text and acknowledgements, is my original work.

The conclusions reached and the opinion expressed in this text are those of the author and not necessarily those of the Human Sciences Research Council who financed this research.

D S HANSSON

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ABSTRACT

Only limited research has been undertaken regarding the effects of extra-legal variables on the verdicts of lower courts. Bennett and Feldman (1981) have demonstrated that the well-formedness of the semantic structure of testimony determines its credibility. It has been shown that the comprehensibility of narrative discourse (testimony) is a reliable indicator of its well-formedness (Thorndyke, 1977). This study aims to explore the relationships between comprehensibility (well-formedness) as a dependent variable, and magistrates' credibility judgements, the ethnicity of witnesses and their court roles as independent variables. Simple three way Anovas constituted the bulk of the statistical analyses.

Verbatim transcripts of 36 court cases (105 testimonies) comprise the total sample. The first 36 cases that included undefended accused who had pleaded not guilty and who had led evidence, were chosen. An equal number of testimonies judged by magistrates to be credible and incredible, and an equal number presented by 'coloured' and 'white' witnesses and by complainants and accused, were included. During the common users' analysis in the pilot phase, 3 'white' common users assessed the credibility of 4 cases (16 testimonies), in random order. They defined 9 types of encoding problems (incomprehensibilities) - irrelevant and delayed information, direct and empirical contradictions, expectation conflicts, ambiguous wording, missing and inadequate justifications, and other problems. A qualitative analysis showed that encoding problems were caused by 'defects' in the semantic structure of testimonies ie, that comprehensibility was 'determined' by well-formedness. It was noted that each type of encoding problem was expected to affect credibility differently. The common users concluded that they had used incomprehensibilities (encoding problems) as indicators

of deception, ie, that low comprehensibility (low well-formedness) had caused low credibility.

During the first phase of the main study 3 different common users noted incomprehensible propositions in the remaining 32 cases in random order. These measures were operationalized as percentages of the total number of propositions, ie, as dependent variable measures of the overall comprehensibility (well-formedness) of testimonies. The second phase, a content analysis of the 620 incomprehensibilities (encoding problems) was conducted by 3, different 'analysts'. The incomprehensibilities were classified into the 9 encoding problem categories. The number of each type of encoding problem was operationalized as a percentage of the total number of problems in each testimony, ie, as dependent variable measures of the relative occurrence of each type.

It was found that testimonies judged by *magistrates* to be incredible and those presented by 'coloured' witnesses, were perceived by *common users* to be less comprehensible (well-formed) than those that magistrates had judged to be credible and those presented by 'whites' ($p \leq 0.01$). Accuseds' and complainants' testimonies were not perceived as differing in their comprehensibility. The relative proportions of each type of encoding problem did not differ according to whether the testimonies were credible or incredible. Nor did it differ according to whether they were 'coloured' or 'white', accused or complainants.

It is argued that magistrates behave similarly to common users. It is inferred that magistrates' credibility judgements and verdicts are influenced by the comprehensibility (well-formedness) of testimonies. The deduction is that 'coloured' witnesses may be disadvantaged relative to their 'white' counterparts in interracial cases.

... social life is founded on symbols and the human existence as we know it is grounded in the creation and interpretation of the meanings which are attached to these symbols. Collectively, we have hardly begun to realize the immense control over consciousness and practice which language exerts.

(Esland, 1973: 7)

PREFACE

The general objective of this research is to investigate linguistic interactions as they manifest themselves in a juridical context. More specifically the focus is upon testimony presented in criminal trials in South African magistrates' courts.

The method of dispute processing used in the legal systems of most 'developed' countries is the criminal trial. In the accusatorial system the criminal trial is a forum in which competing claims to 'the truth' are put forward and evaluated (Miller and Boster, 1977). The competing claims are made by witnesses participating in a criminal trial and take the form of testimonies. Testimony is thus the form of communication available to witnesses. It is semantic discourse that is structured so as to persuade the presiding magistrate of the superior credibility of a particular witness's claim. The relative credibility of testimonies is the central factor determining the final verdict of guilty or not guilty (Bennett & Feldman, 1981). In this study the comprehensibility (well-formedness) of testimony is proposed as the most important factor affecting magistrates' perceptions of credibility and, more significantly their final judgements.

In South Africa the social structure is such that the various officially classified 'non-white' race groups have long been afforded minority group status. Minority groups possess less of the political, economic and social power in a society. Numerous theoretical accounts, many supported by empirical findings, have concluded that persons labelled as belonging to minority status groups, are more likely to be treated in a manner that operates to their disadvantage within legal processes (Dane and Wrightsman, 1982). Given the South African social milieu and the view of testimony as persuasive, semantic discourse, this study explores sources of disadvantaging that may be experienced by persons of minority group status. The persons chosen are the 'coloured' people and the source of disadvantaging is that of communicative performance within criminal trials. Testimonies differ in their comprehensibility. It is hypothesized that the ease with which magistrates comprehend testimony is dependent upon the well-formedness of its semantic structure. Magistrates may perceive the testimonies of witnesses of a minority group status as being less comprehensible than the testimonies of witnesses of a majority group status. In turn, this lowered comprehensibility may cause lowered credibility, which means that accused of a minority group status may run a higher risk of being disbelieved and therefore convicted; and complainants of a minority group status may have a greater chance of 'loosing' a case. In précis form then, this project has two central aims ie, to investigate whether the comprehensibility of testimony plays a role in the evaluation of its credibility, in an extra-court context. Contingent upon this finding, is the exploration of differences in the comprehensibility of testimony as a potential source of disadvantaging for persons of a minority group status.

This research is the first of its kind, since no previous study has been made of language processes in criminal trials in a South African context. This empirical 'breakthrough' has been facilitated by access to court transcripts that had not been previously available, not only in South Africa but in most other countries. The research constituting the foundation of this thesis like any research, has not developed in isolation of previous ideas. The conceptual approach taken and the procedure used, is relatively novel within the international parameters of research into the criminal trial. The roots of such ideas rest in work first conducted as recently as 1981 (Bennett and Feldman, 1981).

The concepts and hypotheses central in this study are derived from four, recently emerged fields of interdisciplinary investigation ie, cognitive science, the sociology of law, psychology and the law, and language and the law. Since this thesis forms a new point of confluence of previously disparate concepts and findings, it is essential that the origins be traced clearly.

At the most general level, the concern with the investigation of human behaviour in legal contexts, and in particular within the courtroom itself, has been prompted by work in the field of psychology and the law. Chapter one is a general overview of the areas that have been investigated within this field. This should provide readers with a framework in which to situate the present study. The central aim of this chapter is to demonstrate the need for research into language-processes that link decision-makers to witnesses. The focus upon language behaviour and the well-formedness (comprehensibility) of discourse has its direct roots in the fields of language and the law, and more specifically, in

transformational semantics. This is a new subarea of cognitive science which is rising to prominence in psychology, linguistics and artificial intelligence. Since this thesis is written for readers with little linguistic or legal training, chapters two to six have been assigned to a comprehensive discussion of the major concepts and findings constituting the theoretical foundation of this study. These chapters should provide readers with the working knowledge required to understand this research. In Chapter two the trial is presented as a process of communication to attain particular legal ends. In chapter three readers are introduced to the field of linguistics with its major conceptual controversy regarding meaning. Chapter four is a more detailed analysis. Here the relevant theoretical models are evaluated critically. In chapter five there is a detailed discussion of the pertinent theoretical concepts. The focus is then returned to the legal context in chapter six. There is a consideration of the link between linguistic processing and the legal task of the evaluation of credibility. To conclude this comprehensive introduction, the role played by social group characteristics in generating discriminatory practices in the criminal justice system, is discussed. This has formed a controversy fundamental to the fields of the sociology of law and social psychology. It is the author's hope, that readers will at this point have sufficient information to develop a wholistic understanding of what is by definition a complex, but highly significant field of investigation.

1. PSYCHOLOGICAL RESEARCH INTO LEGAL PROCESSES

1.1. Historical introduction

Until approximately fifteen years ago there had been a pervasive scepticism among legal professionals as well as social scientists, regarding the utility of social science research pertaining to the criminal justice system. This scepticism has limited research in this field. Psychology it seems, has been the social science that has fuelled this general scepticism. It is probable that the overly enthusiastic claim made by Münsterburg at the turn of the century, that psychology could function as a forensic science by providing methods for the reliable detection of deception in the courtroom, initiated this doubt (Lloyd-Bostock, 1981). The claim that psychological methods could be applied to the prediction of deceptive testimony, was based securely on the assumption that witnesses' memories mirrored past events accurately. The school of experimental cognitive psychology started by Wundt in the early nineteenth hundreds produced empirical findings that rocked this pivotal assumption. Research showed consistently that memory for past events was unreliable. It could be altered by factors that were beyond the purposeful control of the individual. This challenge to the field of psychology as a forensic science led to the gradual withdrawal of some researchers to the more academic field of experimental cognitive psychology. This began the partial demise of systematic social science research into legal processes (Lloyd-Bostock, 1981).

The growth of public criticism regarding the legitimacy of power structures in society that characterized the sixties, provided an

impetus for the rapprochement of social science and the law. Much of the earlier scepticism has remained among legal professionals. Since the early seventies psychology, sociology and linguistics in particular, have provided significant inputs to the interdisciplinary study of the law and legal processes. This trend has been most relevant in North America and Britain and has begun to counteract the long-standing paucity of systematic research in the legal context. The aims of this research are of a more humble nature than those proposed so vehemently by Münsterberg and his colleagues. Research and theory aim to promote the understanding of various legal processes, with an eye to improving their functioning as well as the competence of lay-people participating in such processes.

1.2. Central trends

The redeveloping interest of psychologists in studying legal processes has followed three main trends since the early seventies. Those disillusioned by the very early investigations of the reliability of testimony in court have turned instead to a study of alternate, 'extra-court' phases of the legal process. In a recent critical review of research and practice in the field of psychology and the law, Lloyd-Bostock has delineated four phases of the legal process that are beyond the confines of the courtroom ie, the pre-trial phase, substantive and procedural law-making, the treatment and disposal of offenders, and finally the broad arena of societal attitudes and responses to the legal system (Lloyd-Bostock, 1981).

Those motivated by the 'failure' of earlier courtroom studies have persisted with the investigation of 'in-court' processes. Interest in courtroom

processes has generated a proliferation of research second only to work in the field of the treatment and disposal of offenders. The majority of this work with the exception of very recent research, has attempted to gain an understanding of behaviour *in* court by studying behaviour *out* of court. Thus the second trend has been the use of simulation in which 'court-like' contexts are constructed to serve as experimental situations. The final trend has been followed mainly by social psychologists. It is the study of social behaviour in non-legal settings and the theoretical extrapolation of the findings to behaviour in court.

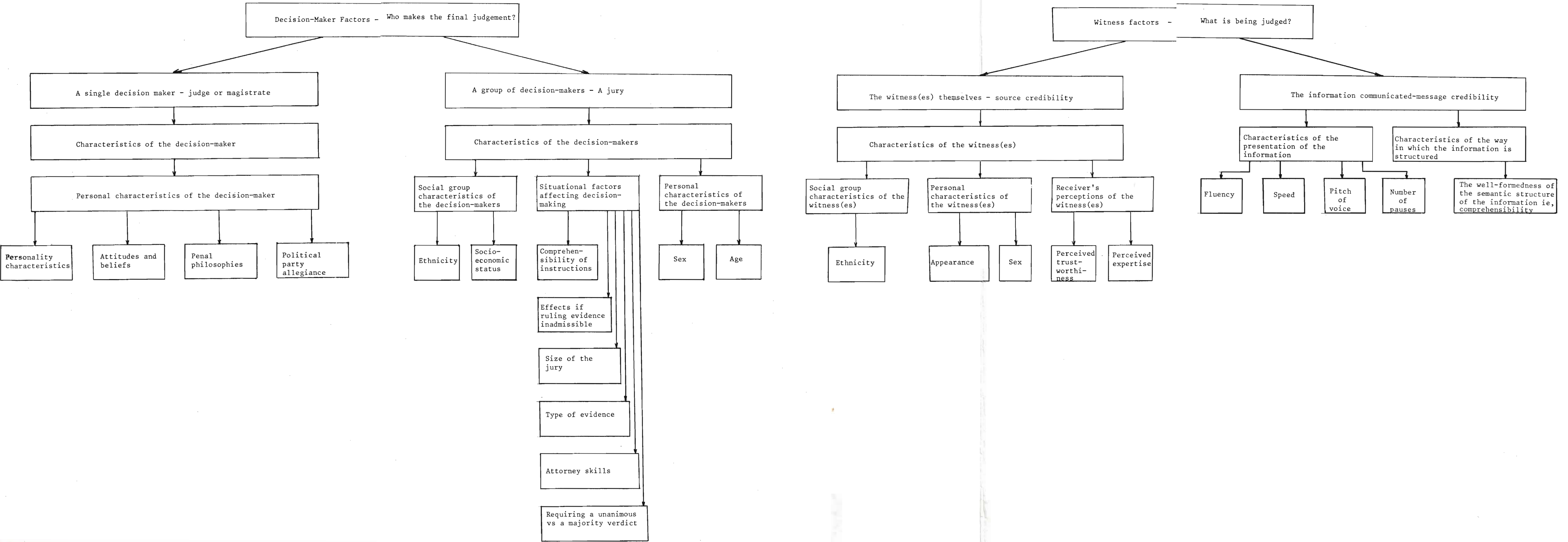
There has been a great interest in the role of extra-legal factors in decision-making. This has developed out of a fundamental shift in the premises of cognitive psychology. Psychologically speaking, the process of reaching a verdict must involve comprehension, memory and decision-making of many kinds. It is a set of interrelated cognitive processes (Kaplan, 1982). Memory is no longer viewed as fulfilling a mere automatic, copying-function such as that of a camera. Cognition is now described as an active, constructive and re-constructive set of processes. More significantly, many aspects of cognition are believed to be shaped by the perceiver's personal attitudes, beliefs, goals, expectations, past experiences, social group characteristics, as well as situational factors and other people's responses to the perceiver (Anderson, Staats and Bostrom, 1969).

This perspective has formed the foundation of the constructivist approach in cognitive science. It is from this perspective that the impartiality of legal judgement has been challenged. The view of the judgement as a set of interrelated cognitive processes that are influenced by a

multitude of extra-legal factors, has generated increasing concern with the possible bias introduced by the personal characteristics of court participants. Since the legal ideal is to reach a just verdict by the consideration of legally relevant factors *only*, any verdict that is affected by legally irrelevant, personally-related characteristics may be criticised as being unjust. Research on this topic is by its very nature a challenge to one of the fundamental axioms of criminal justice. It has therefore generated a continuing controversy which explains the proliferation of work in this area. The extra-legal factors of ethnicity and socio-economic status have been central to the controversy in countries that have ethnically diverse populations and economic systems that rest upon a **distinct** socio-economic structure, such as Britain and North America.

The research under discussion in this thesis, is concerned with the effects of extra-legal factors on the outcomes of criminal trials. Hence, only those courtroom studies that have dealt specifically with the relationship of extra-legal factors to the verdict have been selected for this critical overview. Even if the area is restricted in this manner there is still an abundance of research into a large range of extra-legal factors. Figure 1-1. is a simple framework in which to situate the subsequent information. It emphasizes the paucity of work considering the *structure of spoken* language as an extra-legal factor of importance in influencing the verdict.

Figure 1-1. Extra-legal Factors Affecting the Verdict



At the most general level, the extra-legal factors affecting the verdict may be divided into decision-maker factors and witness factors. Decision-maker factors are characteristic of the person/people who decide the verdict ie, the judge, magistrate and/or jury. Witness factors are those variables affecting *what* is being evaluated to decide the verdict ie, the characteristics of the witness and/or their behaviour, and characteristics of the messages that they communicate in court.

1.3. Decision-maker factors

The majority of this research has focused on juror and jury characteristics. Such research has been particularly dominant in North America, as juries are still widely used in the various jurisdictions in the U.S.A. and Canada. However the criticism has been levelled even in North America, that a disproportionately large percentage of research attention has been focused in this area to the exclusion of other relevant topics (Lloyd-Bostock, 1981). Some of the juror characteristics which have been investigated are; the ethnicity, socio-economic status, sex and age of jurors (Kerr and Bray, 1982). The jury has been viewed as a small group. Research adopting this view has arisen from social psychology's concern with small group decision-making processes in general. Some such variables are; the comprehensibility of instructions to jurors (Sales *et al*, 1977); the size of juries (Ziesel, 1971); the type of evidence presented to juries (Sealy and McKew, 1981); the effect of ruling evidence inadmissible (Sealy and Cornish, 1973); the effect of different questioning techniques used by attorneys (O'Barr and Lind, 1981); and the effects of requiring unanimous as opposed to majority verdicts (Ostrom *et al*, 1978).

The personal characteristics of judges have been investigated to a far lesser extent than those of jurors. For example, variables such as the personality attributes of judges (Gofman, 1977); their political party membership (Goldman, 1975); their attitudes and beliefs and their penal philosophies, have been considered (Champagne and Nagel, 1982).

In conclusion, the most relevant question is, what findings do such a multitude of studies offer? The answer is unfortunately, very little! Jury research that is based on simulation and the extrapolation of findings from non-legal contexts has been criticised severely. The findings cannot be directly generalised to predict courtroom behaviour. A study by Konecni and Ebbesen has concluded that different factors affect judgement behaviour in and out of the courtroom context (Konecni and Ebbesen, 1979). Jury research has also been dismissed as of little relevance to the understanding of the majority of criminal trials, since juries are rarely used except in the most serious cases. Lloyd-Bostock eloquently summarizes the general feeling regarding past research on extra-legal jury factors. It appears that this conclusion may be accurately applied to research into the extra-legal characteristics of judges:

While one or two consistent findings have emerged, such as that older juries are less lenient (Sealy and Cornish, 1973), in general attempts to predict jury verdicts from juror characteristics have confirmed the general finding in psychology that personality, attitudes and other individual characteristics alone are poor predictors of behaviour.

(Lloyd-Bostock, 1981: 3)

1.4. Witness factors

1.4.1. Source credibility factors

It is necessary at the outset to state the obvious: In the context

of an accusatorial criminal trial, the decision-maker's perception of the relative credibility of testimonies directly determines the final verdict of guilty or not guilty. Should the case for the defence be deemed more credible than that of the prosecution, the outcome would be a verdict of not guilty and the consequent acquittal of the accused. The complainant under such circumstances could be said to have 'lost' the case. This pertains only to cases in which the accused pleads not guilty. In the case of a plea of guilty the accused seldom presents testimony. However, should the case for the prosecution be deemed more credible than that of the defence, the outcome would generally be a verdict of guilty as charged and the conviction and sentencing of the accused would follow. The complainant could be said to have 'won' the case. Hence, the consideration of what variables influence the credibility of both the witnesses and their testimonies is of central importance in the prediction of the verdict. In cases where there is no complainant ie, victimless crimes, the State calls witnesses for the prosecution. Should these witnesses be found more credible than those of the defence, the State may be said to have 'won' the case. An example of a victimless crime is a traffic offence.

This explanation implies the standard of proof known as the civil standard ie, that magistrates consider the relative probabilities of the two sides of a case, believe the more probable and accord it 'success'. Lawyers may take issue, pointing out that in criminal cases the burden of proof generally rests with the prosecution and a second standard of proof is applied ie, the criminal standard in which proof must be beyond a reasonable doubt. In applying the criminal standard, magistrates should acquit accused in cases where they find the prosecution case *more* credible and the defence case less credible, because they are not certain beyond a

reasonable doubt that the defence case is 'untrue'. Another example is when magistrates state an equal belief in both the defence and prosecution cases. Since the burden of proof lies with the prosecution magistrates should then acquit the accused. However, there are instances in which the onus of proof falls on the defence ie, when the legislature enacts this (Hoffman and Zeffert, 1981).

In the same judgements in this study, the magistrates made no reference to the operation of the criminal standard of proof. However, their formulations seemed to indicate that once they had made credibility findings their verdicts followed almost automatically (without reference to the standard of proof).

Two groups of variables affect whether people believe what they are told or not ie, the perceived reliability of the informant - the witness in question; and the perceived reliability of the message communicated - the testimony delivered. Factors that are associated with witnesses per se ie, *who* is communicating; have been termed source credibility factors. Characteristics of the information communicated have been labelled message credibility factors (Russel, 1984). The study of source credibility factors has been a popular topic in social psychology. Once again, the findings are from research conducted in non-legal settings and hence fall prey to the criticism of not being directly generalizable to courtroom behaviour. The dominant conclusion reached is that the credibility of a speaker is determined by the hearer's perceptions of the speaker's trustworthiness and competence. In other words, can the speaker be trusted to speak the truth; and is the speaker sufficiently 'qualified' to give a valid opinion upon certain factors? (Cronkhite and Liska, 1976).

Other work on source credibility using 'in-court' data has been concerned with accused characteristics and to a lesser extent with complainant characteristics (Dane and Wrightsman, 1982). Some examples are; the ethnicity of the accused and complainant (Landy and Aronson, 1969); the attractiveness of the accused (Sigall and Ostrove, 1975); their socio-economic status (Nagel, 1969); and their sex (Nagel, 1969). However, there is a general paucity of work relating accused characteristics to verdicts handed down by single decision-makers ie, judges and magistrates (Champagne and Nagel, 1982).

In conclusion then, extensive efforts have been made to identify the extra-legal variables that determine the verdict especially in Britain and North America. The diverse characteristics that have dominated investigations have been overt, static, individualistic variables such as the ethnicity, socio-economic class, age and sex of accused, judges and jurors. Alternatively, vaguely defined, catch-all notions such as the attitudes and penal philosophies of judges and jurors have been considered. The list runs on almost to the direction in which judges stir their tea! However, the investigation of such a multitude of variables has culminated in inconsistent and therefore inconclusive results. Low correlations have become the rule rather than the exception (Bennett and Feldman, 1981).

1.4.2. Message credibility factors

The limited range and number of studies of factors affecting the credibility of messages in the legal context, stands in stark contrast to the abundance of research in the allied field of source credibility. It is this relative scarcity of systematic work that prompted the focus on message credibility factors in this study. Findings which have added indirect impetus to the

study of message credibility have originated in social psychology, largely from research into social behaviour in non-legal contexts. Of direct relevance are the set of findings concerning the detection of deceptive communications. It has been shown consistently, that there are marked differences in people's ability to deceive (Hocking; *et al*, 1979). People are not well skilled at distinguishing accurately between deceptive and 'truthful' communications, especially when these are presented by strangers (Littlepage and Pinneault, 1979). People express considerable confidence in their judgements of the veracity of information communicated, even when such judgements are incorrect (Hocking, 1976). These findings are of central relevance within the context of the criminal trial. It is in *this* situation that one would expect the probability of deception and the need to detect deceptive communications in a reliable manner, to be highest. The significance of these results in relation to the criminal trial, is that the verdict reached may *not* be a reflection of the actual 'truth' of the case for the defence or case for the prosecution. Rather, it may be the result of differences in the skill of witnesses at effectively deceiving the decision-maker. Alternatively, it could be due to differences in the credulity of *decision-makers relative to witnesses* from different social groups.

It is not surprising that studies of the factors characterizing deceptive testimony *in court*, and in particular *that* deceptive testimony that is effective, have not been undertaken. The impossible task of ascertaining which testimony is deceptive and which is not has prevented such undertakings. In fact this is what prevents the verdict from being completely reliable. However, it is surprising that there are few findings of this specific nature generated in *non-legal* situations. It is social psychologists who have once again headed the research concerning the

characteristics of arguments that are effectively persuasive in non-legal settings. Unfortunately these findings are particularly inconclusive (Miller and Burgoon, 1982).

It was following an unsuccessful 'hand-search' of the literature that a computer search was conducted. The international psychological, sociological, language and legal abstracts were searched from 1975 onwards. The aim was to locate *any* work that had focused upon message factors affecting the credibility of communications in the legal context. The search revealed disappointingly little in this field. Besides the study by Bennett and Feldman to be mentioned, other topics that have been investigated have shown a move away from the study of the direct relationship between the outcome and the structural characteristics of messages. The trend has been to explore those para-linguistic and verbal factors that improve or degrade the credibility of the source and the argument. It should be noted that messages are not merely linguistic in nature. The total meaning is conveyed by the entire communication system ie, the utterance which consists of lexical, syntactical, phonetic and semantic features; its para-linguistic features of tone, pitch, loudness, emphasis, rhythm, timbre, pace; the facial expressions and head movements of the sender; and the body movements and posture of the sender (Taylor, 1979). Variables such as the fluency and speed of the language flow, the number of pauses and the pitch of the speaker's voice; and the kind of dialect used, have been found to influence credibility (Addington, 1971; Apple *et al*, 1979; O'Barr, 1982). Some work has been done on the techniques that may be used by prosecutors and attorneys to improve their arguments (Colman, 1970).

Of particular relevance to this research however, is a study conducted by Bennett and Feldman in a non-legal context (Bennett and Feldman, 1981). They have reported that communications that are perceived as being credible

are not necessarily those that are in fact 'truthful' accounts of past events. Instead it is the well-formedness of the semantic structure of communications that determines their perceived credibility. It is noteworthy that factors such as, the length of the account, the number of actions it contains and the style in which the information is presented, do *not* appear to influence the judged credibility of the information to any significant degree (Loftus and Greene, 1983). This finding supports the decision to exclude such factors from the study at hand. Thus the only legally-oriented finding in this specific area, is that testimony that is effectively credible is that which is semantically well-structured. By implication, effectively deceptive testimony must be well-structured.

1.5. Summary conclusions

This chapter has demonstrated the paucity of systematic research in certain key areas of psychology and the law. This prevents a wholistic understanding of legal processes. This study was designed to enter a number of these key areas of neglect:

- the factors affecting credibility judgements made by *single* decision-makers;
- a consideration of the social group characteristics of socio-economic status and ethnicity, as *influencing* the perceptions that decision-makers form of the credibility of communications;
- a focus upon *message* credibility factors ie, the *well-formedness of the semantic structure and comprehensibility* of information;

- an examination of the *specific, dynamic cognitive processes* that are involved in making judgements of credibility. These may be contrasted to the static, overt characteristics and the vaguely defined, catch-all variables that have been of interest in the past.

To conclude then, the originality and necessity of the research endeavour under discussion is thus clearly supported.

2. THE CRIMINAL TRIAL AS A LANGUAGE PROCESS

Argumentative discourse is the structural mode of actualization of law in the dispute settlement context. Rhetoric is argumentative discourse aimed at seeking adherence on the basis of persuasion. The backbone of such discourse is language, used both as a means of argumentation and as a magical form of action.

(Santos, 1977: 4)

2.1. Historical introduction

Historically speaking, there has been a concern with the use of language in the bureaucratic institutions of medicine, in particular psychiatry, and law. This concern originated out of the public criticism of the 'professional' language used in these institutions. During the seventies this criticism gained momentum in North America, eventually earning the title of the Plain English Movement in English speaking countries (Danet, 1980). The critical thrust of this movement was that the language used by bureaucratic professionals, especially in the legal sphere, was incomprehensible to the layperson. This incomprehensibility was said to serve the ideological function of mystifying and legitimating legal processes, thus creating an imbalance of power to the disadvantage of the layperson. The advantage of legal professionals was maintained by

placing an understanding of the formal functionings of legal processes solely within their realm.

In research the main response to this challenge was the investigation of *what* linguistic aspects of *written* legal language were responsible for its incomprehensible nature. Studies focused mainly upon hire purchase agreements (Crystal and Davey, 1969); insurance policies (Shuy and Larkin, 1978); and instructions to juries (Charrow and Charrow, 1979). The general aim was to modify legal language in written documents so as to make it clearly comprehensible to laypeople. In order to achieve this aim it was necessary to investigate how legal language, or what has been termed 'legalese', differed from ordinary, everyday language and to understand in what ways 'legalese' was functional and dysfunctional (Danet, 1980).

It may appear trite to state that *spoken* language is the medium of legal processes. However the ironic fact remains, that it is only in the last decade that systematic research concerning the interrelations between *spoken* language and the law has emerged (O'Barr, 1982). The past concern with *written* legal language has begged the question of how *spoken* language operates in legal processes. Additionally, by definition the term 'legalese' has supported the assumption that all language used in legal processes is specialized and therefore different, in a fundamental sense, from ordinary, spoken language. It is this assumption that has developed recently as a controversial point. One argument is that the language spoken by witnesses testifying during a trial is *ordinary, everyday discourse*. The fact that discourse is modified in the legal context has not been negated. Instead, the normative rules that constrain 'ordinary' communication in the courtroom, such as the

questioning of witnesses by the prosecutor and defence attorney in cross examination, are taken to be significant variables in recent research endeavours (Bennett and Feldman, 1981; O'Barr, 1982).

Chapter one has illustrated that studies have neglected the investigation of dynamic, interactional processes that occur among court participants. In particular the relationship between interactional communication processes and the verdict has not received systematic attention (Danet, 1980). This criticism may also be applied accurately to the majority of work on factors that affect sentencing behaviour in trials (Bennett and Feldman, 1981). It has been suggested that this neglect of interactional processes is a product of the positivist methodology that has been used in such work. Research informed by such an epistemology may succeed in exposing the fact that some parts of a criminal justice system function in a manner that differs from the legal explanation of its functioning. However, it does not prompt the explanation of *how* legal processes operate at an informal, inter-personal level; nor *why* legal processes continue to function in the face of differences between the 'law in books' and the 'law in action'. One response to this challenge has been an urgent call for a change in the epistemological foundation of criminal justice research in South Africa (Van Zyl Smit, 1983). The hermeneutic approach of interactionism has been proposed as one alternate epistemology. The basic premises of interactionism include:

- a focus on language and communication;
- a concern with ordinary language;
- an emphasis on processes as opposed to static variables;
- an acknowledgement of the primacy of everyday understandings and interpretations of social processes as a

supplement to, if not as a replacement for, those offered by social scientists (Atkinson and Drew, 1979).

This call for a change in epistemology does not necessitate the complete rejection of the positivist approach to empirical research.

Instead Bernstein has proposed that empirical data from both positivist and interactionist perspectives be combined (Bernstein, 1976). The research under discussion here has been designed to incorporate some of the premises and methodological 'tools', that have originated within both the interactionist and positivist schools of thought. The four basic premises of interactionism mentioned above, have been adopted in conjunction with a positivist-type methodology of rigorous hypothesis testing, the quantification of behavioural responses and the statistical analysis of the data generated.

Chapter one has highlighted the dearth of *empirical studies* concerning the effects of structural aspects of communication on the final verdict. This weakness in the empirical knowledge-base is mirrored in the entire field of language and the law (Danet, 1980). This is due to the very recent development of the field as a forum for research. The fact that in South Africa even such a limited knowledge-foundation is non-existent, should be recognised. Not only is there a general paucity of empirical research into the South African criminal justice system, but more significantly, South African researchers have neglected to investigate communication in the legal context. Olmesdahl and Steytler have discussed the range of research conducted into the criminal justice system in South Africa. Studies of communication do not appear in this discussion (Olmesdahl and Steytler, 1983). The existence of this 'vacuum' in research into South African criminal justice more than

justifies the study of the nature, functions and effects of the use of everyday language in the negotiation of this aspect of the social order. Work conducted in other countries has provided researchers with conceptual tools. In the subsequent sections of this chapter a number of relevant theoretical models have been selected for discussion. These models promote an understanding of the presentation of testimony and of the process of judgement as interrelated parts of a general and dynamic communication process, that is aimed at the settlement of legal disputes.

2.2. The trial as a speech situation

2.2.1. Introduction

Every setting in which verbal communication is the predominant behaviour may be termed a speech situation. This concept has been developed in socio-linguistic models of communication (Hymes, 1971; Grice, 1975). Behaviour it is generally accepted, is situationally influenced. When communication is viewed as a behaviour, it is seen to be influenced by the interaction of a variety of factors that are specific to any particular speech situation. Thus, at least nine *sets* of features may be expected to shape the final meaning interpreted by receivers ie, the setting, roles, act sequences, tone, channel, *genré*, goals, norms of production and norms of interpretation (Hymes, 1971). This reinforces the fact that social reality is manifested in highly complex processes particularly in the legal arena. Empirical research by its very nature must deal with a reduced number of variables at any one time (Keppel and Saufley, 1980). In this study, there has been a necessary narrowing of

the focus to the last three of these nine sets of critical features.

2.2.2. Dispute processing goal

A criminal trial in which accusitorial proceedings are utilized, has been described as a communication event for the processing of legal disputes (Bohannan, 1957). The role of language in the conceptualization, processing and resolution of disputes is a topic which has attracted the majority of theorists' attention in the field of language and the law (Danet, 1980). In the South African criminal justice system the method of dispute processing used is 'fact-oriented' talk that is aimed at the 'just' settlement of disputes. In such 'fact-oriented' genres of disputing:

... the highest metamessage is that through talking about 'evidence' in a dispute we 'find facts', and 'do truth and justice'. At a somewhat lower level is the metamessage that the claims made while determining 'facts' are themselves subject to challenge, negotiation and argument.

(Danet, 1980: 498)

Disputes arise from competing claims to a resource, such as would occur in an alimony case and/or conflicting explanations of past behaviour that allegedly breaches some social norm, such as would occur in a common assault case. It is often meaningless to attempt the clear separation of these two types of disputes ie, conflicts of interest from normative arguments. Competing claims to a resource generally rely upon normative justifications and arguments regarding norm violation are largely motivated by self interest (Roberts, 1979). It is for this reason that no attempt has been made to distinguish between the two in this sample.

Legal disputes comprise the following three broad stages: the claim, the counteraction and the outcome (Bohannan, 1957). The detailed

description of each of these stages has been included to serve as a background for the reader who has no legal knowledge. The claim takes two basic forms: It begins with the charge that is laid by the State or the complainant against the accused. Each charge is actually a claim made by one party against another that the second party has performed some behaviour that breaches a social norm and is punishable by law. The dispute may also hinge upon some behaviour that was *not* performed eg, negligent driving. As has been mentioned, disputes may also occur over the ownership of, or right to, some resource. To simplify the discussion such alternative cases have not been referred to directly. Additionally, the discussion refers to cases having a single complainant and a single accused who has breached a single social norm. Once again for the sake of brevity, mention has not been made of the alternatives ie, cases involving many accused and the breaching of more than a single social norm.

Ideally, in order for any behaviour to be punishable by law, that behaviour must match the legal definition of a particular offence. Every legal offence is defined in law by a set of criteria. In the act of laying a charge the complainant is in fact alleging that the accused has performed a behaviour that corresponds with *all* of the criteria comprising the *legal* definition of a particular offence. For example, the offence of common assault is defined by the following criteria:

- it is an act of force applied to a person and/or their clothing, and/or the inspiration of fear in a person;
- the act must be intentional; and
- the act must be unlawful.

The act is considered to be unlawful when it is *not* committed:

- in order to carry out a lawful court judgement eg, the whipping of a convicted accused;
- whilst attempting or effecting an arrest;
- by a school principal, parent and/or guardian upon the child(ren) in their care;
- in defence of oneself or another, or one's property or the property of another;
- when consent has been given eg, in sporting contests, religious, customary or superstitious practices that involve only minor injury;
- for the purposes of medical operation or treatment;
- due to everyday bodily contact; and
- if the injury sustained is trivial (Hunt, 1970).

In some instances the complainant is not aware of the criteria that have to be met for the charge to be applicable to the behaviour which is under dispute. In such cases the 'incorrect' charge is laid and this may 'weaken' the case for the prosecution.

At a later stage the charge is followed by the case for the prosecution that is presented during the trial itself. This case consists of testimonies delivered by the complainant and in some cases by witness(es) for the prosecution. Ideally, these testimonies function to support the charge that has been laid. In some cases, aspects of the case for the prosecution may ironically it seems, stand in support of the case for the defence. The testimonies on behalf of the prosecution are structured in the following manner: The prosecutor questions the first witness. Then, the accused may cross examine the witness. This applies to undefended accused only. Finally, in some instances the magistrate may

also question the witness. The magistrate may question any witness at any time during a trial. Before the witness is allowed to stand down, the prosecutor may re-examine the witness with the permission of the presiding magistrate. This process is applied to all the witnesses for the prosecution. The magistrate concludes the case for the prosecution once this has been accomplished.

The counteraction is the response that is made by the accused. It also takes two forms: Initially the accused must enter a plea of guilty or not guilty to the charge. This may take place at the beginning of the actual trial or during a pre-trial hearing. Should a plea of guilty be entered, evidence is seldom led on behalf of the prosecution or the defence. In such instances, the second phases of both the claim and counteraction do not take place. The accused may lead evidence in mitigation of sentence. This will be followed by the handing down of the sentence. The outcome stage will be reached. The second phase of the counteraction only occurs when a plea of *not guilty* is entered by the accused. The case for the defence is then presented following the case for the prosecution. It consists of testimonies delivered by the accused and in some cases by witness(es) for the defence. Ideally, these testimonies operate to refute the various elements of the charge. The accused may choose not to lead evidence at all and/or not to call witness(es) for the defence case. This occurs frequently when the case for the prosecution is deemed to be 'weak' ie, based on circumstantial evidence alone. In undefended cases the testimonies for the defence have the following structure: Initially the first witness is prompted by the magistrate to present his/her **argument** in response to the case for the prosecution. During this presentation the magistrate may question the

witness intermittently. On conclusion the prosecutor may then cross examine the witness. Once again the magistrate may choose to re-examine the witness in order to clarify some point(s) or gain added information before the witness is asked to stand down. The same procedure is followed in the presentation of each of the testimonies for the defence until the magistrate closes the defence case. (See Fig. 2-1. p 25).

The outcome stage of a trial consists of three phases: First, the judgement is handed down by the presiding magistrate regarding his/her perceptions of the credibility of each of the witnesses and the reasons for these credibility judgements. In summary, the magistrate will provide a conclusion regarding the credibility of the case for the prosecution *as a whole* relative to the case for the defence *as a whole*, or vice-versa. The judgement includes references to the ways in which the case for the prosecution has provided, or has failed to provide, testimonial evidence in *support* of the various elements comprising the charge. Additionally, there is a consideration of the ways in which the case for the defence has provided, or failed to provide, testimonial evidence that *refutes* the various criteria of the charge. The judgement culminates in the pronouncement of the verdict of guilty or not guilty.

The phase which follows the verdict is one in which the accused who has been acquitted is 'set free'. In the event of a conviction, the next phase is one which allows the convicted accused the chance to lead evidence in mitigation of sentence. The criminal trial is concluded with the handing down of the sentence and the removal of the sentenced accused from the courtroom to police custody.

Figure 2-1. Ideal Structure of a Case

The entire court case.

The case for the prosecution.

1. Testimony delivered
by the complainant.

The Partici- pant Initiated Section.	The Cross Examina- tion Section.
--	--

2. Testimony delivered
by witness(es) for
the prosecution.

The Partici- pant Initiated Section.	The Cross Examina- tion Section.
--	--

The case for the defence.

3. Testimony delivered
by the accused.

The Partici- pant Initiated Section.	The Cross Examina- tion Section.
--	--

4. Testimony delivered
by witness(es) for
the defence.

The Partici- pant Initiated Section.	The Cross Examina- tion Section.
--	--

2.2.3. Communicator roles

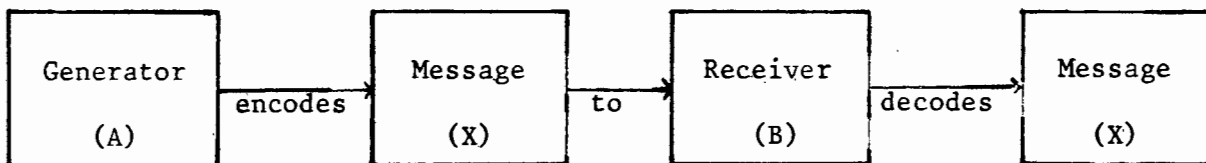
The various stages in the processing of a legal dispute have been described. This study is concerned with the information generated in the second phases of both the claim and counteraction ie, the presentation of testimonial evidence by both the prosecution and the defence. More significantly, there is a consideration of *how* the information communicated during these phases is used in making the judgement and how it may affect the verdict reached in the outcome stage. This section is a discussion of the alternating roles that each of the court participants takes in order to communicate during these phases of dispute processing.

Traditional models have been oversimplistic in their descriptions of communication as a more or less static, two-sided occurrence. For example, Goyer maintains that communication is any event that includes:

... the four sequential ingredients of (i) a generator of (ii) a sign-symbol system (iii) which is projected to (iv) at least one receiver who assigns meaning to the system.

(Goyer, 1967: 15)

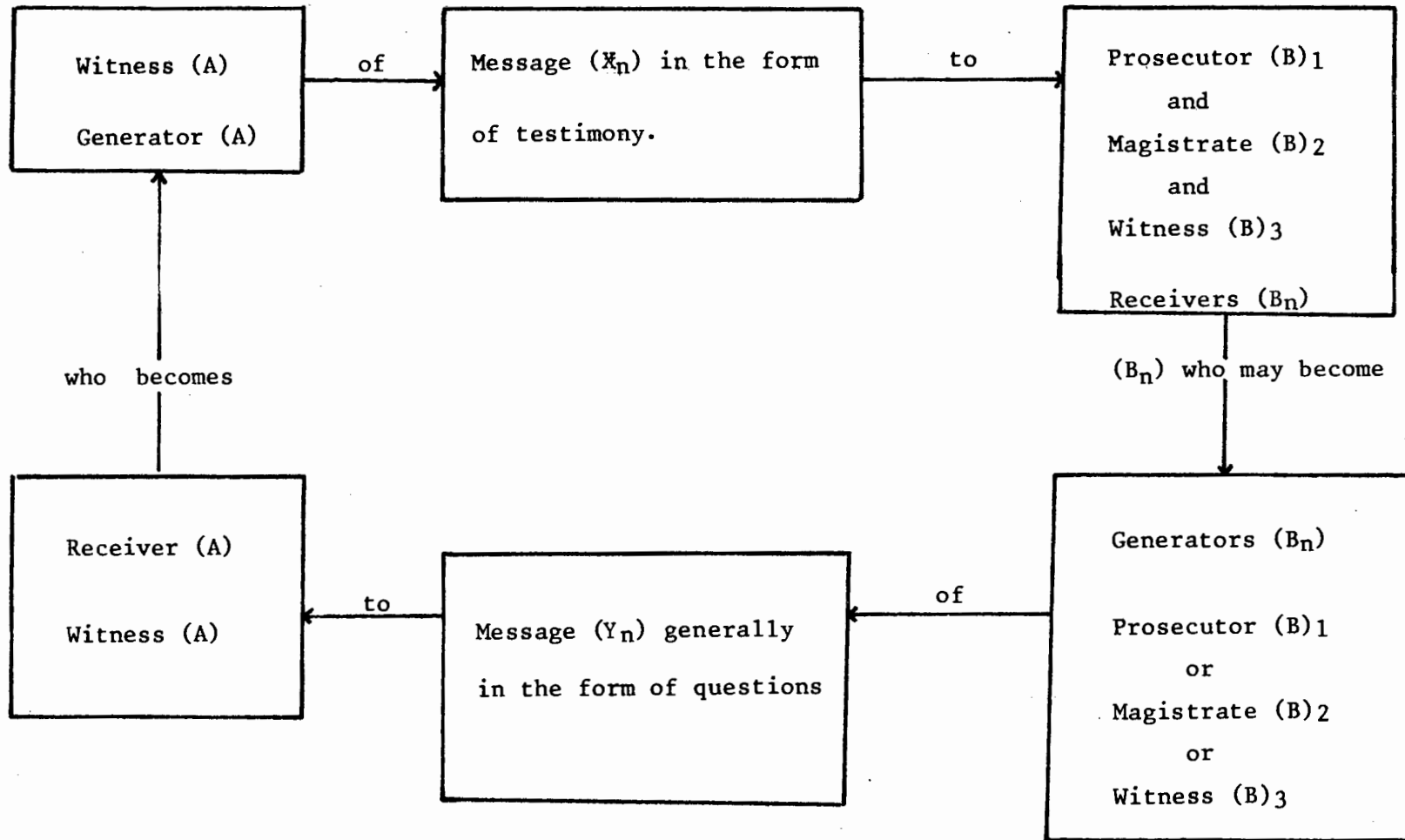
Figure 2-2. Communication Model



This type of model has been replaced by the view of communication as a *continuous process* in which *all* parties to a communication event function in the alternative roles of generator and receiver. For example, a message (X) from generator (A) will be received by receiver (B). This message (X) will create some response in receiver (B) who

may then become a generator (B) of another message (Y). This message (Y) may in turn be received by generator (A) who then takes the role of receiver (A) and so on (Anderson, Staats and Bostrom, 1969). This model has been applied to the process of communication in the claim and counteraction phases of the trial. Figure 2-3. is a diagrammatic representation of this applied model (See Fig. 2-3. p 28). During the case for the prosecution the witnesses function as the *primary* generators (A_n) of large amounts of information ie, messages (X_n). This information is projected to the defence witnesses, the prosecutor and the magistrate, who primarily fulfil the role of receivers (B_n). However, these receivers (B_n) also take the role of generators (B_n) of smaller amounts of information (Y_n) that are projected to the generators (A_n) as questions. The generators (A_n) may in turn take the alternate role of receivers (A_n). The question-type messages (Y_n) serve to prompt responses in the receivers (A_n) which starts the process once again. Alternatively in the case for the defence, the witnesses function as the primary generators of large amounts of information and the prosecutor, magistrate and witnesses for the prosecution, fulfil the role of receivers. However, they also operate as generators of question-type messages. This dynamic process of role swapping during communication continues throughout the presentation of testimony. *No* court participant is a *static* receiver or generator of information.

Figure 2-3. Communication During a Trial



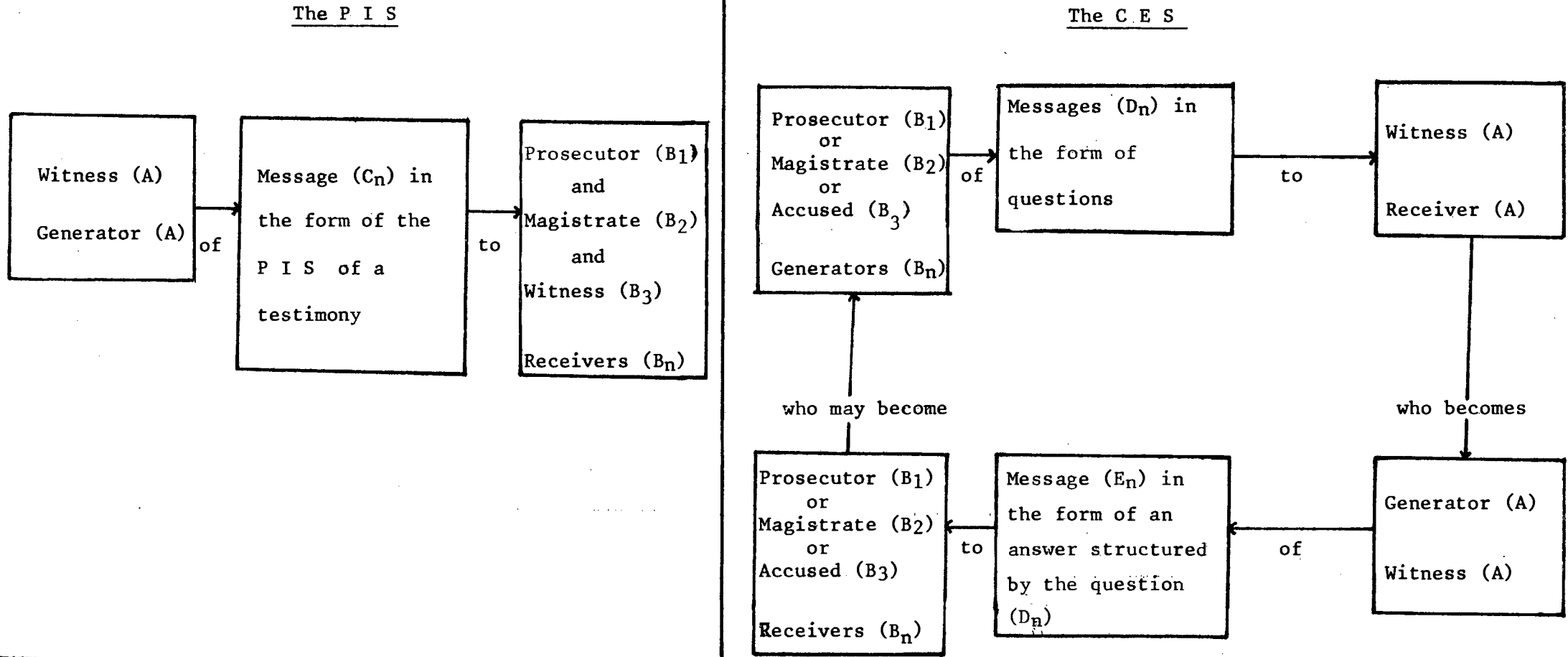
At a more micro-level are the roles taken by court participants during the *two* phases of the presentation of a *single* testimony. Figure 2-4. is a diagrammatic representation of these roles (See Fig. 2-4. p 31). For the purposes of this research, the information presented prior to and after the cross examination phase has been termed the *participant initiated section* of testimony. During the subsequent discussion the participant initiated section has been abbreviated as P I S and the cross examination section as C E S . Information constituting the P I S is generated mainly by the witness themselves. There is relatively little 'prompting' from other court participants. Peculiar to the South African context is the statement of 'vertel vir my jou storie' which is frequently used by the presiding magistrate as a prompt to initiate the P I S of the accused's testimony. The P I S 's of testimonies may therefore be described as having a narrative form. In contrast, the *cross examination section* of testimonies comprises information that is a response to the questioning of the witness by other court participants. It is distinguishable as a question-type mode of communication. Relatively little is known about questioning as a basic mode of communication. However, research that has been conducted within the realm of socio-linguistics has addressed the social functions of questioning in various situations (Danet and Kermish, 1978; Phillips, 1979; Schegloff and Sacks, 1973). The general conclusion reached is that questions serve three fundamental functions in the trial context: First, they prompt witnesses to provide *additional* information when receivers deem it to be necessary. Second, questions serve to test the reliability of testimonial evidence. The aim of testing evidence is to determine the credibility of both the witness and their testimony. Third,

questions may be used as an instrument of control to constrain the amount and quality of the information communicated ie, questioning alters the semantic structure of the message.

Ideally, the first function of questioning is fulfilled during the presentation of the P I S 's of testimonies. The second occurs during the presentation of the C E S 's of testimonies. It is ironic to note that this may not be the case. In a number of studies of eyewitness testimony, Loftus has found that questioning provides *more* information than results from a narrative style of testifying. The first function is fulfilled. More significantly though, questioning leads to *less* accurate information being presented (Loftus, 1975, 1977, 1979). This tentative finding challenges the very foundation of the accusatorial system of proceedings. It tends to cast doubt upon the view of the prosecutor as a mere 'tester' of the reliability of testimony during cross examination.

The magistrate functions to a limited extent as a generator of information in his/her role as 'questioner' up to this point in the trial. It is largely the role of the receiver and processor of information that the magistrate must fulfil in reaching a final verdict. The process of making a judgement does *not* only begin once the counteraction stage has been completed. It is an *on-going process throughout* the trial, beginning when the indictment is read out and culminating in the handing down of the verdict. The judgement becomes overt only when the magistrate verbalises his/her reasoning for the verdict following the close of the case for the defence. The magistrate then becomes the primary generator of information in the courtroom. Along with the other court participants the magistrate is an *active* participant in the interactions that constitute communications *during* the trial.

Figure 2-4. Communication in P I S 's and C.E.S.'s



2.3. Summary conclusion

This chapter has illustrated the dynamic roles played by court participants as communicators during the criminal trial. It is now clear that witnesses actively and purposefully *construct* messages that are the vehicles of certain meanings. These meanings are transmitted linguistically to other court participants and in particular to the magistrate. The aim of any witness is to persuade the magistrate as ultimate decision-maker, of the superior credibility of that witness's explanation of some past event. The success of any message thus lies in the impact it creates upon the magistrate. The efficacy of the message is determined by the degree to which it is believed by the magistrate. However, in order for the magistrate to believe what the speaker intends the intended meaning must also be the meaning which the magistrate interprets from the message he/she receives. Immediately that any variable alters the meaning *conveyed* from the meaning *intended*, a change in the impact of the message must be expected. This change of impact may be an improvement or a degradation of the magistrate's credibility regarding the message. It is the magistrate's task to decide which of the competing explanations he/she believes. This task supersedes the final task of comparing the *most credible* explanation to the legal definition of the offence to decide whether the accused's behaviour does in fact match the criteria of a punishable offence. It is rare that these two tasks are independent of each other. Generally, when the plea is not guilty and the accused's testimony is believed, it contradicts some of the criteria of the legal definition. The verdict to follow will be one of not guilty. Should the complainant's version be accepted, it generally matches the criteria of the legal definition and results in a conviction.

There is a wide range of variables which may alter the intended meaning of testimony. In the pilot study, the common users examined aspects of the semantic structure of testimony. They explored the relationship between the meanings they interpreted and their perceptions of credibility. Hypotheses were then developed regarding the processes that could alter witnesses' intended meanings to those interpreted by common users/magistrates ie, processes that could influence the perceived credibility of testimony. Two major processes are postulated: First, 'defects' in the semantic structure of testimonies that *receivers perceive* as altering the interpreted meaning (credibility) of testimony. Second, the effect of questioning on the interpretation of receivers. The general shaping-effect which questioning has upon the semantic structure of testimony is the process considered in this chapter. The point has been made that the way in which a testimony is structured does *not* depend upon the linguistic performance of a witness per se. It is shaped to a substantial extent by the process of questioning utilized by *other* court participants and in particular the prosecutor. Testimony is the end product of interaction.

In the light of these comments a comprehensive theoretical analysis of the alteration of intended meaning would be one which dealt with semantic aspects of testimony that are generated by the witnesses themselves in structuring their testimonies; those that are produced by processes of questioning and; those that are the result of the receiver's perceptions of the meaning of testimony. The former two may be termed 'structural aspects' and the latter, 'interpretative aspects' of testimony. The focus in this research is upon the interpretative aspects of testimony. The process by which questioning alters the intended meaning has not been investigated directly ie, structural aspect. The notion of questioning as a generator of interpretations that induce

incredulity on the part of receivers, has been discussed in a speculative manner.

3. TESTIMONY : STRUCTURED, SEMANTIC DISCOURSE

... the evidence per se may sway the jurors less than does the interpretation that jurors place on that evidence.

(Loftus and Greene, 1983: 326)

3.1. Introduction

At this point the lay reader should be situated mentally within the context of the trial and be developing a sense of the 'everyday, human aspects' of the trial process. However, the image of the magistrate which may have been generated in the previous descriptive sketch of dispute processing is one of an 'objective, automatic information processor'. This is a typically legal image which **most** often dominates perceptions of the judgement process. It is also one which is challenged, both explicitly and implicitly, throughout the subsequent discussion. This study focuses directly upon the cognitive functioning of *receivers* of information rather than upon generators of information. Thus, the following section turns attention to the 'humanization' of conceptions of the magistrate, a receiver, in reaching the judgement ie, in fulfilling the tasks of processing linguistic information, interpreting meaning and of deciding the relative credibility of competing explanations of past events.

3.2. Rationale

The rationale for the focus upon the receivers of information is tripartite. At the most general level it is the magistrate, a receiver, who wields the ultimate power to decide the verdict.

This study has been designed with an eye to exploring factors which may influence the verdict. This means that the cognitive processes which immediately precede and determine the final decision reached, are of concern. The criminal trial is imbued with an aura of truth and justice (Danet, 1980). The polarized constructs of truth as opposed to deception are fundamental to both legal and lay conceptions of justice. The magistrate must ideally accomplish the accurate discernment of 'factual' or 'true' information from that which is purposefully deceptive or 'untrue'. In order to be certain that any statement about an event is 'factual' a receiver of that statement would have to be present during the occurrence. This would facilitate the verification of the event by direct sensory experience (Anderson, Staats and Bostrom, 1969). Testimonial evidence comprises statements about past events to which the magistrate was not party. Hence, almost none of the information can be termed 'factual proof'. The exception to this would be concrete evidence such as photographs which may be termed 'factual evidence'. Additionally, the probability of information being distorted in order to support any particular claim, is increased due to the fact that both the complainant and the accused are motivated to 'win' the case thereby avoiding the negative consequences of 'defeat'. It is the magistrate who is imbued with the authority to decide what he/she accepts as being the 'facts of the case' or 'the truth' (Danet, 1980). The central question then arises as to what criteria the magistrate uses to assess the 'truth value' of the testimonial evidence ie, credibility. As has been demonstrated clearly in chapter one, there does not appear to be a conclusive, empirically supported answer to this question. 'The truth' appears to be defined in terms of its effect. Any information that induces a state of belief in those who

receive it is taken as being 'factual evidence'. The 'truth' is that which *the magistrate* decides is credible (Miller, 1966). The extent of the power vested in the magistrate is exposed when one considers that the 'facts' of a case do not pre-exist, but are *determined* by the magistrate. He/she must decide what will count as the 'facts' (Scheff, 1968). Objectivity is the totality of received opinion on what is acceptable and not acceptable; desirable and not desirable; and good and not good (Esland, 1973). It then appears trite to emphasize further the necessity of exploring the actual criteria that are used by *receivers/magistrates*, to assess the credibility or 'incredibility' of the information that they receive. It has been demonstrated that there are certain aspects of the structure of a message that act as cues for receivers that the message is deceptive, or rather not credible (Bennett and Feldman, 1981). This proposition may engender a misconception that such cues accurately reflect the existence of deceptive attempts by a sender. Rather, let it be emphasized that such cues are *perceived and used* by receivers *as if* these were accurate indicators of 'untrue' information. Since there is no certain way of assessing the actual veracity of testimonial evidence, no statement may be made as to whether such cues are *accurate* indicators of deception or not. This research endeavours to identify and detail such cues.

Finally, since testimonial evidence cannot be viewed as consisting of statements that are discernably true or untrue, it may be described in a more realistic fashion. It is pragmatic to adopt the 'neutral' viewpoint that testimonial evidence is structured, semantic discourse. The magistrate may then be characterized as a human, cognitive processor of linguistic information, ie, a receiver/common user.

In the sense that the magistrate is human, he/she is subject to the same cognitive limitations of capacity and quality in processing and storing linguistic information, as 'ordinary' receivers are. This is certainly not a novel perspective within the field of psychology and legal processes. Kaplan has been one psychologist who has strongly supported the investigation of the pragmatics of the judgement process, as an opposition to traditional legal explanations (Kaplan, 1982). The glut of empirical research concerning the role played by extra-legal factors illustrates social scientists' concern with the disadvantages of utilizing human, cognitive processors to perform the tasks of judgement and sentencing (Kerr and Bray, 1982). This emphasis upon the 'human nature' of magistrates demonstrates the fact that laypersons and legal personnel *do* share common cognitive processes. This is not to negate that following long-term experience in the courtroom, magistrates may develop cognitive strategies which are modifications of the 'ordinary' cognitive processes. However, since there is such a paucity of both theory and research findings on the topic of the cognitive assessment of credibility, it is necessary to investigate the basic, unmodified cognitive processes that facilitate credibility judgements made by 'everyday' laypeople. Later studies are planned for the investigation of the cognitive strategies that are particular to magistrates. The following three chapters are a detailed consideration of the general cognitive strategies that are involved in receivers' processing of semantic discourse. In the remainder of this chapter the discussion is turned to the concept of meaning that forms the foundation of the linguistic theory and research fundamental to this thesis.

3.3. The meaning - controversy

3.3.1. Introduction

It has been stated that testimony may be conceived of as structured, semantic discourse. This term may not convey a clear meaning to readers who have little linguistic training. A general definition should thus introduce the discussion. Semantic discourse refers to sets of sentences, both spoken and written, that are connected to form a coherent, meaningful whole (Danet, 1980). In order that a receiver form a meaningful and wholistic interpretation of a piece of discourse, that receiver must *comprehend* the meaning that is conveyed by the discourse. When this statement is related back to language use in the courtroom, the implication is that the magistrate must comprehend the meaning that is conveyed by a testimony as a *prerequisite* to making any assessment of the credibility of a testimony. Hence, prior to a discussion of how the credibility of information is evaluated, it is necessary to detail how the message received is interpreted and thence represented in the memory of a receiver as meaningful information. Once one enters the realm of meaning one enters the field of linguistics. Within linguistics meaning is a tangled, conceptual mass. Since Aristotle, the debates of the philosophy of language have continued to rage unabated. A detailed consideration of the full range of these issues is not within the ambit of this thesis. However, certain issues which are fundamental to an understanding of this research have been selected for discussion.

Linguistics is the formal study of *language*. Language is not synonymous with *communication*. Communication is a broader concept than that of

language. It refers to the entire range of 'tools' available to any language user to convey meaning to other language users. Such 'tools' include para-linguistic, non-verbal as well as linguistic devices. Alternatively, language is the verbal and written vehicle of communication. This study has been designed to exclude all communication factors other than the semantic structure of the language used in testimony. This focus on language necessitates the inclusion of linguistic concepts as a theoretical base. Linguistics is concerned with the communication of meaning through sound and the investigation of the rules for the production and interpretation of meaningful units of language. The units of language that have been defined are those of sounds, words, phrases, propositions, sentences and paragraphs. Rules have been derived as to how such units are grouped into forms that are meaningful to all users of a common language (Noordman, 1979). The traditional school of linguistics comprises two central fields of interest. In the field of semantics the focus is on the relations between language signs and the 'real' objects to which such signs refer. The main topic in the field of syntactics is the formal relations among language signs. One theoretical issue which distinguishes the traditional school of linguistics from the more contemporary school of pragmatics, is the debate as to *where* meaning resides in language.

3.3.2. Meaning as object

The concept of meaning that has dominated the traditional school is that of *meaning as object*. This concept is derived from the epistemological base of logical positivism (Danet, 1980). It holds that language units convey static meanings that are consistent across all situations. Language users learn the circumscribed set of sign-meaning combinations

that characterize their mother tongue. This results in the language user acquiring something akin to a dictionary in memory. Additionally, the language user learns the circumscribed set of grammatical and syntactical rules for combining the language signs in order to convey meaning. Once a language user has acquired the 'semantic dictionary' and the rules of combination, he/she may be regarded as being *communicatively competent* (Chomsky, 1965). One implication of this statement is that if the rules are applied correctly, the language user is equipped to characterize reality *objectively* (Russel, 1956). A second implication is that people who share a common language system and who are *communicatively competent*, will derive the same meaning when using a particular set of language signs (Freedle and Carroll, 1972). The most significant corollary to this notion of meaning is that the total meaning of any piece of discourse resides *within* the discourse itself. The *total* message conveyed is equivalent to the meaning that is contained *in* the language of the message. The analogy may be drawn of words that function as goods-trucks conveying particular meanings as finite goods to a receiver. The receiver merely decodes the sounds comprising the words and matches the words to the cognitive 'dictionary' to gain the meaning thereof. The summation of these meanings provides the overall meaning of the discourse.

3.3.3. Meaning as act

The concept of meaning as object and its implied premises have triggered criticism at many levels (Filmer, *et al*, 1973; Wooton, 1975). The alternative concept of *meaning as act* has developed as the major opposition to the concept of meaning as object. The concept of meaning as act

characterizes the contemporary school of thought known as pragmatics. In pragmatics there is a concern with the relation of language signs to the interpreters of the signs (Danet, 1980). This study has been derived from the basic assumptions about meaning that distinguish the field of pragmatics. The critical thrust that is central to the concept of meaning as act is that the meaning conveyed by any utterance is *not* limited to the circumscribed meanings of the sounds, words and sentences that comprise it. Utterances convey meanings that go beyond the literal or direct meaning contained in the language units (Gazdar, 1979).

Human cognitive processors are viewed as having capacity limitations that constrain the quantity and quality of information that can be processed and understood at any one point in time (Norman, 1976). Therefore, linguistic messages are a reduced set of cues rather than a complete, self-contained set of meaningful information (Noordman, 1979). Language signs are mere *cues*. They function to restrict the meaning that is conveyed by a message to a *range* of potential meanings. The receiver must *infer* what the sender could conceivably have meant by selecting a particular message from among an infinite set of possibilities (Black and Bower, 1980). For the receiver to hone down the range of possible meanings to a specific interpretation of a message, the receiver makes use of situational cues and inferences. These are derived from expectations of *more probable* meanings that constitute receivers' general knowledge of the world (Freedle and Carroll, 1972). People don't 'unpack' the meaning of lexicalities. They use cues to expand the meaning as much as is necessary to comprehend a given message, in a given context, for a given purpose (Frederikson, 1975). This notion derives from the premise that the total is greater than the sum of the constituent parts. This is the premise long standing in the Gestalt school of

thought. As a criticism of the concept of meaning as object, it may be traced to an awareness that both language producers and receivers show marked empirical variations, in their application of grammatical and syntactical rules in language use. The polemic that "every phrase out of context is plurisemantic" illustrates this point (Cicourel, 1973: 40). The idea of context-free processing supported by traditional linguistics, does not appear to operate in reality (Frederikson, 1975). The differences in the meanings attributed to any message across situations, are determined by *contextual* factors. For example, should a person make the utterance of 'Fire!' in the context of a smoke-filled room, the meaning of the utterance would lie in its function ie, that of a warning. Should the same utterance be made by a soldier standing alongside a canon, the meaning of the utterance would certainly change to one of a command or instruction.

Three sets of contextual factors are identified: First, the context of the discourse itself. The meaning of any word or sentence derives from its relation to the other words and sentences comprising the discourse (Ortony, 1979). Previously, traditional linguists have been concerned with the study of isolated sounds, words and sentences. Such research has been criticised as artificial in nature (Fodor *et al*, 1974). In reality, language receivers are faced with the task of comprehending sets of combined sentences ie, discourse. It is rare, except in social science research, that we are required to understand separate sounds, words and sentences. Testimony consists of *many* sentences. Second, the extra-linguistic context of the time, place, people and the goal to be accomplished by the conveyance of the message. For example, witnesses present testimony to persuade the magistrate of the superior credibility of their explanation

for some past event. Third, the conceptual context of the receiver. This refers to the cognitive knowledge of the receiver that is brought to bear during the comprehension of meaning (Frederikson, 1975).

Understanding may be regarded as a process whereby a listener or reader attempts to infer the knowledge structure of a speaker/writer by using the available linguistic message, contextual information, and his own knowledge store as 'data structures' from which the inference is to be made.

(Frederikson, 1975 : 371)

This claim lies at the heart of the constructivist approach to cognition. Language producers and receivers are not passive, automatic encoders and decoders of a sign-meaning system. They are active and flexible in their use of language. Language comprehension and production is reconstructive not reproductive!

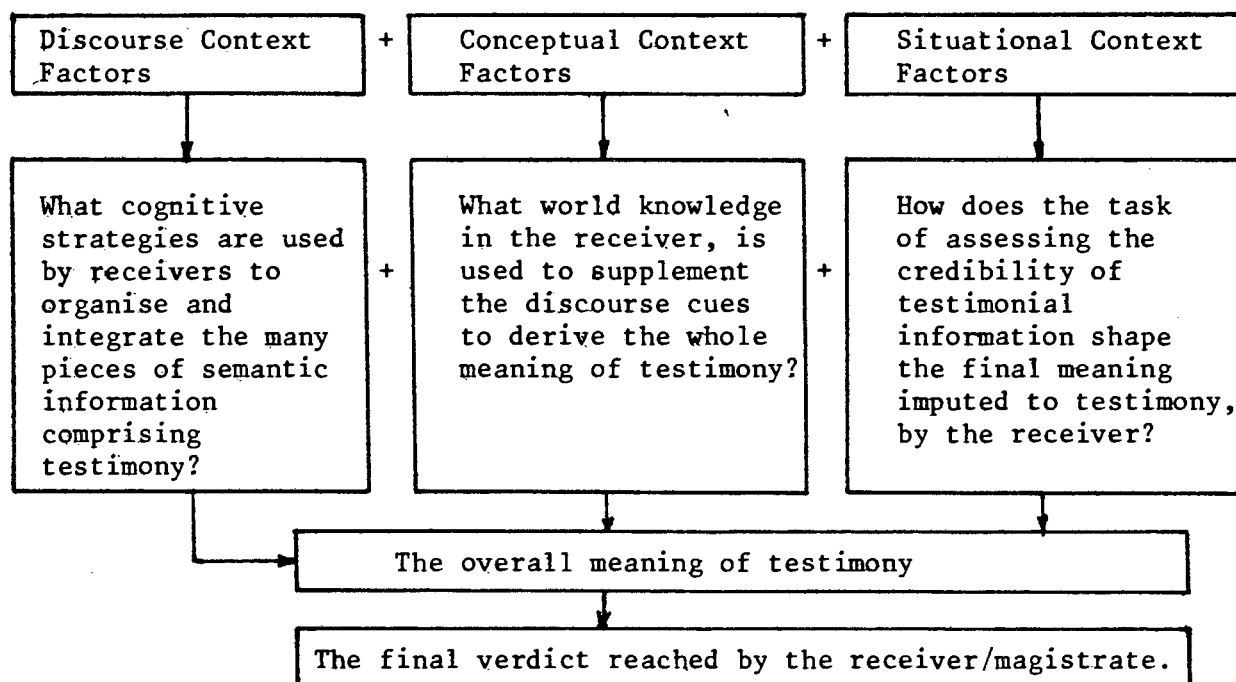
This concern with variables that are external to the contents of the message itself, has given rise to two fields of research. During the fifties and sixties interest was awakened in the cognitive processes underlying the construction and comprehension of language. This interest has generated the field of psycho-linguistics (Slobin, 1971). In the later sixties and seventies the field of socio-linguistics began to develop. In this field there is a consideration of the interrelations among *patterns* of language use and social and situational factors (Gumperz and Hymes, 1972). It is the influence of these fields which has led to a general acceptance of the notion of *communicative performance* as the complement to communicative competence (Chomsky, 1965). It embodies the idea that language users not only master the *ideal* rules of language production and interpretation. In addition, they must acquire knowledge of how to *modify* their language use and understanding to fit

the constraints of different situational goals eg. attaining credibility in court. This study considers receivers' perceptions of witnesses' communicative performance in presenting testimony.

3.4. Summary conclusions

This study falls within the ambit of pragmatics as it considers the influence of the contextual factors of the task, the receiver's conceptual context and the context of the discourse, upon the final meaning that receivers derive from messages. Figure 3-1. below is a summary of factors that affect the final meaning imputed to testimony by a receiver. A discussion of these factors and their roles in the cognitive processing of testimony forms the topic of the following three chapters.

Figure 3-1. Contextual Factors in Meaning



The study bears both a psycho-linguistic and socio-linguistic flavour. It is psycho-linguistically oriented in its concern with the cognitive processes used to accomplish the central task of comprehending the meaning, and assessing the credibility of semantic discourse in the criminal trial. The study fits the trend of socio-linguistics in its focus upon how variations in the language of speakers from different social groups, influence the interpretations that receivers make of their messages. In this study, it is postulated that variations in the structure of language cause differences in the comprehensibility of testimony and therefore in receivers' perceptions of its credibility.

4. THE DISCOURSE CONTEXT

A discourse is coherent if its respective (sentences and) propositions are connected.

(Kintsch and Van Dijk, 1978: 365)

4.1. Introduction

In this chapter there is a consideration of *how* the many and varied pieces of information comprising testimony, are organized by receivers into a framework of meaningfully related concepts. This framework forms the context of the discourse (Black and Bower, 1980). This study deals with the way receivers perceive semantic structure as affecting the comprehensibility of testimony. Thus, it is imperative that readers understand *what* semantic structure receivers place upon testimonial information. This requires an examination of how receivers organize information to form representations of testimony in memory. It is the *memory representation* of testimony that is evaluated when the credibility

of the information is assessed.

For the purposes of the study, schematic devices have been used to model the organization of the memory representations for testimony. The concept of a schemata as cognitive devices that organize information in memory, has a long history. As far back as 1932, the cognitive psychologist Bartlett contended that the comprehension, storage and recall of stories is facilitated by the use of a set of socially-determined, cognitive processing-conventions (Bartlett, 1932). This notion was shelved during the reign of behaviourism. The use of schema in the processing of semantic discourse could not be explained within the confines of the stimulus-response paradigm (Van Dijk, 1980). Since the early seventies there has been a rediscovery of schema as heuristic and theoretical devices.

4.2. Schema

Although there are a variety of theories that utilize a schematic base, the majority do share a common conceptualization of the criteria characterizing schema (Thorndyke and Hayes Roth, 1979). The schema is a prototypical abstraction of the complex concept which it represents. It is a framework that serves to relate concepts. The framework consists of 'slots' into which unique stimulus events are fitted eg, different pieces of information. Schema are developed from past experience within a particular culture. Persons of that culture draw out the common elements in input information. Such common elements serve to define the 'slots' in the schema-framework. Since the schema is a cognitive abstraction, it is independent of the particular occurrences that it is used to organize. However, there is the risk of separating *form from content* in an artificial manner. The premise is that certain types of knowledge do take *consistent* forms in memory ie, testimonial

information is organized into hierarchical causal chains by story-schema. Receivers' perceptions of the schematic content of any piece of testimonial information, dictate the level of the hierarchy at which it is represented in memory. Receivers' perceptions of semantic content differ (Schank and Abelson, 1977). Therefore, it is possible for two receivers to place the *same* piece of information at a *different* level in each of their memory structures ie, content changes may produce structural changes.

The question may arise as to why schema are necessary in comprehension, storage and recall? Schema enable the reduction of the receiver's information processing load. Each 'slot' in the schema subsumes a large amount of information by grouping related pieces of information according to some theme. Schema integrate diverse pieces of information by facilitating the identification of a central theme that binds the many pieces of information into a single, meaningful whole. For example, a story schema will aid the receiver of a story in identifying the point or gist of the story. In an assault case the point of the complainant's testimony is generally that some person or people, purposefully injured the physical being of the complainant. Ideally, all of the information presented in the testimony should relate to this theme. Schema thus enable the summarization of vast amounts of information into a few concepts. This reduces the information processing load on the receiver, as well as the storage 'burden'. The schema also fulfils the important function of signalling to the receiver when inconsistencies exist in the input and when the input is incomplete. Each slot in a schema allows the processor to predict both the order and the type of information that is most likely to occur at any point in a piece of discourse (Charniak, 1977). Of even greater significance to the subsequent discussion, is the generation of expectations from schematic

bases. Instead of receivers having to search the vast amounts of information stored in long term memory to interpret and understand incoming information; they need only make a match between the expected and the incoming information (Den Uyl and Van Oostendorp, 1980). The development of expectations regarding the kind of information that is likely to follow other kinds of information, is an additional aid in recall. Once a particular piece of information instantiates the use of an organizing schema, the schema 'slot' into which the piece of information has been fitted, will have to be invoked prior to the recall of that information (Thorndyke and Hayes Roth, 1979). The person who is attempting to recall a particular section of discourse, has only to utilize the schema to know what kind of information they are wanting to recall. Thus the recall of the *gist* of information is facilitated (Mandler and Johnson, 1977). An expectation which proves to be true alters the process of understanding from one of *construction*, to one of elementary *recognition*. Understanding becomes predictive (Schank and Lebowitz, 1980).

A schema-based theory of the representation of discourse in memory forms the base for this study ie, Schank and Abelson's hierarchical macro-schema comprising four levels: causal chains, scripts, goals/plans and themes (Schank and Abelson, 1977). The choice of a schematic-type theory was made, because macro-schema are psychologically valid phenomena in the cognitive processing of lengthy and complex story discourse (Charniak, 1977; Freedle and Carroll, 1972). Since testimonial evidence is both complex and lengthy story discourse, the logic of this choice is obvious.

4.3. Criticisms

Although a schema-theory provides the most relevant and comprehensive theoretical basis for this study, readers should be made aware of the limitations of schematic models. Thorndyke and Yekovich have provided a thorough evaluation of schema-based theories (Thorndyke and Yekovich, 1980). They have used four criteria derived from the philosophy of science (Kuhn, 1962; Lakatos, 1970; Popper, 1959, 1963).

In order for a 'scientific' theory to be deemed adequate it must be plausible, it must have descriptive and predictive power, and it must be testable (Thorndyke and Yekovich, 1980). The authors propose that schema-theory is plausible. The concept has been in use for well over 200 years and its use in everyday behaviour may be identified with ease. For example, the person who sits down to watch a television detective show after the show has started, may deduce the missing information from their story-schema without much effort. Schema-theory also appears to have adequate descriptive potential. It facilitates the explanation of findings in a more comprehensible and parsimonious fashion than previous theories, such as sentence grammars (Thorndyke and Yekovich, 1980). However, schema-theory falls prey to criticism at the last two levels of predictive-potential and testability. The assumptions defining schema-theory have been criticised as being over-generalized. This has encouraged the use of schema-theory to explain a vast number of findings in a *post hoc* fashion. The result is that schema-theory has not been tested adequately as a predictive theory. A more objective test of the adequacy of the theory would be its use in developing hypotheses to be tested in a predictive manner. *Post hoc* analyses do not often generate inconsistent data. Adequate 'scientific' theories should be sufficiently specific to be vulnerable to disconfirmation ie, they should be testable

(Lakatos, 1970). Schema-theory appears impervious to contradictory data. This lack of specificity has led to particular deficiencies in the theory. There is little information as to how input is represented when it does *not* correspond with the expectations derived from the schema. The examination of this topic is central to the study at hand. In addition, there is no detailed account of the processes that instantiate, maintain and discontinue schema during processing. Finally, there is no statement as to the range of knowledge that may be organized schematically. For example, there is no empirical data to answer the question of whether or not we have schema for representing the event of scratching one's ear on the sidewalk; or whether schema exist only for the processing of less detailed events. The conclusion drawn is in agreement with that made by Thorndyke and Yekovich:

Our view is that the shortcomings of schema-theory lie in its incompleteness, not in its inaccuracy.

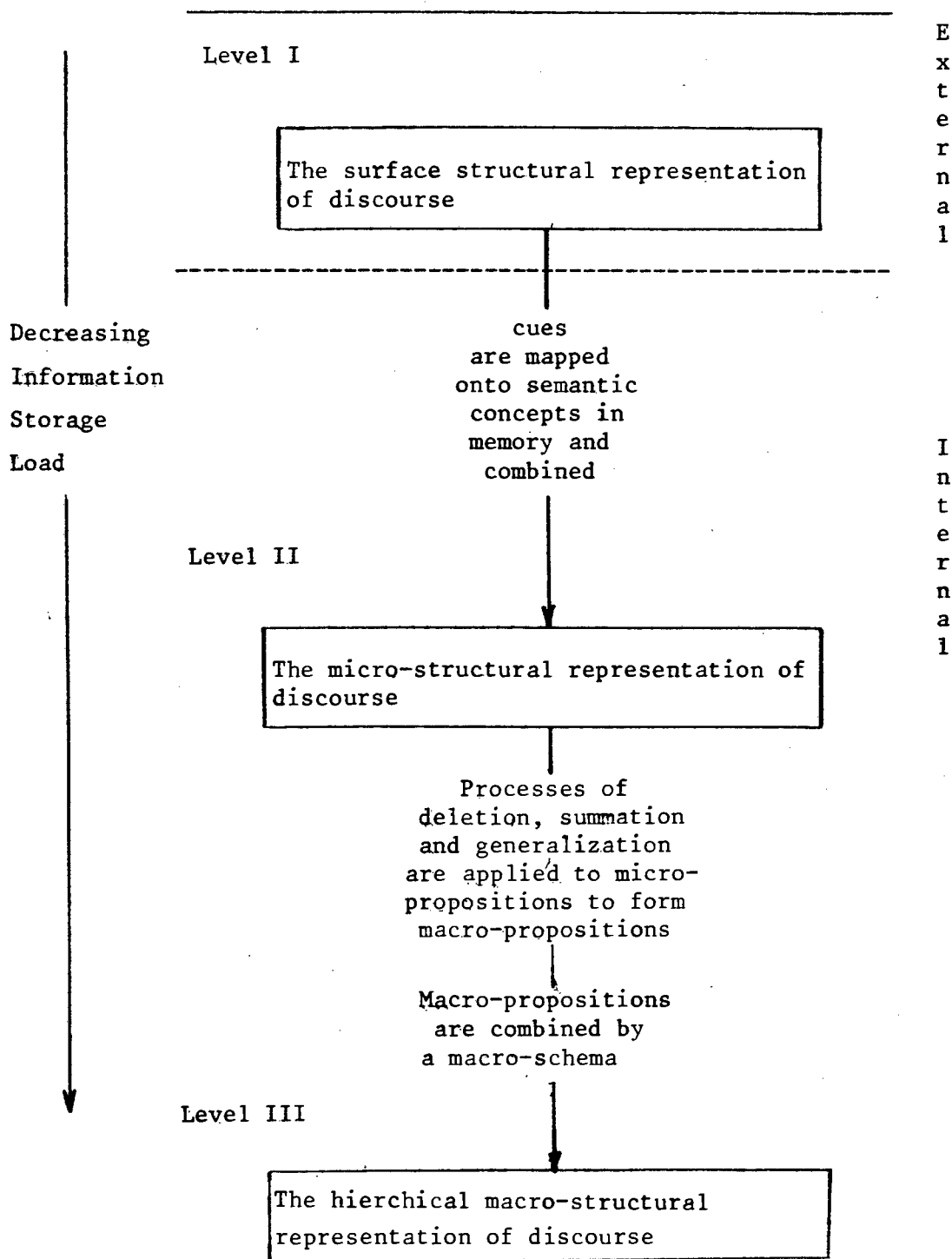
(Thorndyke and Yekovich, 1980: 42)

4.4. Macro and micro-structures

Researchers generally agree that any adequate model of the cognitive organization of linguistic information must explain the following processes: First, there is the process by which the linguistic cues in discourse are mapped onto the corresponding semantic concepts in memory. The semantic concepts include those that are cued *explicitly* by the linguistic content of the discourse ie, those forming the *discourse* context (see Figure 3-1., p 44). This is the process of micro-structural development. The semantic concepts that comprise this micro-structure are the micro-propositions. Second, the micro-propositions are used to infer information from receivers' world knowledge ie, their *conceptual* contexts. This facilitates causal connections among the micro-propositions, and their combination by

generalization, summation and deletion to develop a reduced set of causally connected macro-propositions. Together, these macro-propositions represent the gist of the discourse. They comprise the macro-structure of the memory representation, or the narrative global form of discourse. The macro-structure is the hierarchical framework of 'slots' that constitutes the schema. The macro-propositions are the actual content that fills the macro-structural 'slots' (Van Dijk, 1980).

Figure 4-1. Processes of Representation



4.5. Micro-structure

4.5.1. Conceptual dependency theory

Of concern here, is an answer to the question of how people transform strings of linguistic cues into meaningful thoughts, ideas or concepts, in order to understand natural language. This process characterizes the transformation of the linguistic surface structure of discourse into a set of micro-propositions, or the micro-structure of the memory representation. This is the first 'cognitive step' taken by receivers of discourse in reconstructing the meanings that underly utterances. Micro-propositions are the lowest level knowledge structures considered in this theoretical discussion. The theory of conceptual dependency has been chosen to explain the nature of the micro-propositions comprising the micro-structure of discourse. It is a theory of natural language. It also forms the foundation of the macro-structural model used in this study ie, Schank and Abelson's (1977) model of causal chains, scripts, goals/ plans and themes. Hence, it is imperative that readers understand the basic axioms that define conceptual dependency theory. Conceptual dependency theory was first proposed by Schank in 1972. It has since undergone a number of transformations (Schank, 1972; Schank, 1974; Schank, 1975; Schank and Abelson, 1977). It is the '1977 version' of the theory that is discussed here.

- The first principle of conceptual dependency theory is that all natural languages have a structured conceptual basis in human cognition.
- This conceptual basis is *interlingual*. Regardless of the language used, if any two utterances have an identical meaning, these will be represented identically in memory.

- All *concrete nouns* in a natural language are represented in memory as *stative conceptualizations*, but they have two additional elements: First, they comprise primitive acts. Concrete nouns are also represented in memory as functional definitions of the objects they refer to ie, as active conceptualizations. The language user generates such functional definitions by extracting the common aspects of the function to which the object is put, across many situations. For example, the concrete noun of a spoon usually generates a functional definition of; an object that is used to PTRANS mushy liquid to the mouth to INGEST it. Second, the stative memory conceptualization includes lists of other functions of the concrete noun that contradict the general functional definition. For example, the spoon used a a digging utensil.
- Micro-propositions are connected due to their occurrence in the same goal-related event or time span. This is the notion of episodic memory which forms the basis of conceptual dependency theory. For example, the micro-propositions comprising the sentence, John packed his car and then went to the petrol station, would be stored in the memory 'chunk' consisting of all the other micro-propositions constituting the holiday trip that John was embarking upon.

(Schank and Abelson, 1977)

4.5.2. Criticisms

The criticism may be levelled that conceptual dependency theory does not detail how complex, abstract nouns are represented in memory ie, memory structures for abstract states like peace, justice etc. The concept of primitive actions has been criticised consistently in theory. However, it

is the concept that continues to receive the majority of empirical support (Jackendoff, 1976; Norman and Rumelhart, 1975). Additionally, it is claimed that receivers do not only form memory representations of a detailed kind ie, micro-propositions. Memory representations must include higher level conceptualizations ie, macro-propositions of varying abstraction. For example, scripts, plans/goals and themes. Since this research is exploratory in nature, the level at which testimonial information is organized was not known. This, in addition to the conceptual dependency micro-structural model, it was necessary to include a model of macro-schematic levels of representation ie, the model proposed by Schank and Abelson (1977).

Since conceptual dependency theory ascribes to a model of episodic memory, it receives criticism from those who aspire to other models of memory. The major opposition derives from the lexically-based model of memory. This model describes semantic memory as a hierarchy of words that are connected by their membership to a class. For example, a canary is a bird, which is a domestic animal. The view is, that propositions are stored by relating the propositions at various levels of abstraction. The majority of recent, systematic, empirical data supports the episodic memory model but negates other models (Black and Bower, 1979; Busche and Schaier, 1979; Haberlandt, 1980; Thorndyke, 1977). Yekovich and Thorndyke (1981), have conducted a comparative evaluation of the various models used to represent memory for discourse. They conclude that the episodic model is most effective. The episodic model has been adopted here as the best available.

Finally at the most general level, the theory of conceptual dependency is party to the controversy of linguistic relativity. The assumption that the conceptual basis of language is interlingual, places the theory in

Nezworski, 1978; Thorndyke and Yekovich, 1980). This does not negate the receivers' ability to recall detailed, micro-propositional data. There is empirical support for the short term retention of detailed information from the surface structure of discourse (Baker, 1978; Hayes-Roth and Thorndyke, 1979; McKoon, 1977). These studies showed that receivers' were able to distinguish between those statements that actually appeared in a piece of discourse, and those statements that were paraphrases of the actual information ie, micro-structural processing. However, this notion is a point of controversy in the field of schema-theory. Following a comprehensive review of the findings to date, it has been ascertained that micro-propositions are retrievable (Yekovich and Thorndyke, 1981). This demonstrates the importance of micro and macro-structural components in the cognitive processing of discourse.

When the task is to *recall* an *entire* story, recall protocols are *summaries* of the story. The detailed surface form of the story is retained in the micro-structure (Pratt *et al*, 1982). However, macro-propositions are produced by summing and deleting micro-propositions ie, they do *not* reflect the detailed form in which information was originally presented. When receivers recall a story, the memory search is termed a *top-down, breadth-first* process (Schank, 1974). The memory representation is hierarchical and is searched, beginning at the topmost level of the *macro*-structure. This facilitates the retrieval of the *macro*-propositions comprising the gist of a story (Walker and Meyer, 1980). Receivers' processing resources are directed to retrieving the macro-propositions by using the macro-schema (Graesser, 1978; Waters, 1978). This leaves few resources for the retrieval of the specific structure of micro-propositions (Thorndyke, 1977). Direct access to each micro-proposition is limited.

When the aim changes to one of *recognising* the detailed micro-propositions, the process becomes one of a *bottom-up* search of the hierarchical memory structure ie, a search that begins at the micro-structural level of the micro-propositions. In the case of a recognition task, the processing resources are assigned to finding a match between the details of the surface structure and the micro-propositions that are stored in memory. Receivers gain direct access to the detailed micro-propositions in memory.

It is clear, that the *task* determines the relative use of macro and micro-structures in processing discourse. There is no difference between the *probability* of micro and macro-propositions being *stored* in memory. Rather, there are differences in the amounts of processing that these propositions trigger *during* encoding. The *strength* of the memory traces differ (Britton and Meyer, 1979). Macro-propositions fulfil central roles in a story. Thus, they activate a larger quantity of knowledge from the long term memory store during comprehension ie, the conceptual context. This causes macro-propositions to be repeatedly encoded. Macro-propositional information deteriorates at a slower pace than micro-propositional information (Cirilo and Foss, 1980). Comprehension itself, requires the recall of the gist of stories. It is thus logical, that it is the macro-structure that dominates in speech situations where receivers, like the magistrates and common users in this study, must understand large amounts of complex information (Caccamine and Kintisch, 1978; McKoon, 1977). This discussion thus includes a model of a macro-structural schema.

4.6.2. Story-schema

Different types of discourse require different organizing macro-schema in memory. The schema selected for use in this analysis is the story-schema. Story-schema are models of the macro-structure of memory representations for story-discourse. Since the early seventies, efforts to investigate the schema used to organize *story* information, have multiplied.

This seemingly sudden development of interest in the topic of story-schema has its roots in the work of the Russian formalists. Linguists like Tomashevsky and Skolovskij were working on the formal structural analysis of discourse during the 1920's. The specific focus on stories is often traced to the work of Propp (Propp, 1928). Due to the Russian Revolution the findings from this research were not published until the seventies (Van Dijk, 1980). Today, this field has developed into one of the rare research areas that is characterized by interdisciplinary collaboration (Kintsch and Van Dijk, 1978). Artificial intelligence programmers, psycho-linguists, transformational linguists, as well as cognitive psychologists have amalgamated in their attempts to expand the field. Such research constitutes the first *systematic* investigation of the cognitive-linguistic structure of stories (Van Dijk, 1980). The relevance of the focus on the cognitive structuring of story information, lies in the fact that stories are the *most common* form of discourse used in accounts of everyday, social behaviour and human events. Within any one culture, storytellers seem to engage the same cognitive schema in receivers of stories (Mandler and Johnson, 1977). This idea has support in the empirical realm. It has been found that stories regarding human behaviour that have a serious topic, are structured in a narrative manner (Gentner, 1976; Labov and Waletzky, 1967). Story-schema are a subclass of narrative schema. Narrative discourse merely relates the temporal order of events, whereas story discourse relates the causal sequences of goal-oriented events that are pursued by one or more protagonists (Black and Bower, 1980).

Following an intensive analysis of sixty court cases, ranging from petty offences to murder trials, it has been proposed that testimonies delivered during criminal trials are presented and understood as stories (Bennett

and Feldman, 1981). Storytelling has been identified as the communicational practice used to organize and derive understandings in the courtroom context (Bennett, 1978). The significance of conceiving the trial process as communication via storytelling, is great. As a general conception it facilitates the explanation of how the diverse, and previously isolated extra-legal variables, are interrelated (Bennett and Feldman, 1981; Loftus and Greene, 1983).

...The story itself is a powerful mechanism that determines the relevance, if any, of the(se) other factors to the particular case at the bar. The story provides a basis for transforming the statistical variables into a theoretical framework.

(Loftus and Greene, 1983: 316)

Extra-legal factors such as the socio-economic status, **ethnicity**, sex, age and political affiliations of all court participants may be viewed as *secondary* variables. The cognitive processes by which testimony is structured, both in its production and in its interpretation, now stand as the independent variables that affect the dependent variable of the final verdict. Extra-legal factors have a secondary effect. They influence the process of storytelling and thus the semantic structure of testimony which in turn determines the final verdict.

Further support for the conception of testimony as story discourse derives from subjective impressions gained by the researcher. There is the magistrate's comment of 'Vertel vir my nou jou storie', that characterizes cases in the South African magistrates' courts. This appears to be a social acknowledgement of the form of communication that is *expected* by magistrates in a criminal trial. Finally, the criteria that are used to define a story correspond with the characteristics of testimonial discourse. Stories are said to relate sequences of causally connected events that are goal-oriented. More specifically, the central

goal, or point of the story, is the goal pursued by one or more protagonists. This central aim provides the theme that integrates the many pieces of diverse and apparently disjointed information (Black and Bower, 1980). Take for example the complainant's testimony in a case of theft. The complainant is the central protagonist who constructs a story that has a central goal. The story tells how the accused took some object that belonged to the complainant, without the permission of the complainant. Such a story includes details of the causally related events that led up to the act of theft. Even such a subjective and superficial analysis of testimony does illustrate its story-like characteristics.

4.6.3. Bennett and Feldman

The work of Bennett and Feldman is seminal in the storytelling context of the courtroom (Bennett and Feldman, 1981). This study focuses on testimonies produced within the selfsame context. It may appear unexpected that this model has *not* been adopted as the *macro-structural basis* for this research endeavour. There are two reasons for this choice: First, although the model is clearly based upon schema-theory, it does not include a detailed macro-structural model to explain the representation of and use of story information in comprehension, memory and recall. Some attention is paid to the kinds of cognitive functions performed by the use of schema. However, once again the *actual* cognitive processes that are disrupted by changes in the semantic structure of testimony, and the *ways* in which such cognitive processes are disrupted, are not specified.

Second, these researchers have proposed certain general criteria for the

assessment of problems in the structure of testimonies. The use of these criteria as heuristic devices in research is problematic. Prior to beginning the pilot phase of this research, an attempt was made to use the criteria set up by Bennett and Feldman (1981). It was found that inter-scorer reliability levels were exceedingly low. This indicates that the criteria required the utilization of subjective interpretation to an unsatisfactory extent. This study aimed to identify the *detailed* criteria that receivers use to assess the comprehensibility (well-formedness) of testimony ie, the specific structural violations underlying encoding problems.

However, Bennett and Feldman's work has had a significant impact upon this research. Three of the central premises of their model have been utilized. First, the conception of the trial process as communication through storytelling. Second, the use of the concept of storytelling to integrate previously disparate findings regarding the role of extra-legal factors in shaping the verdict. Finally, the *central* importance of the well-formedness of the semantic structure of testimony in determining credibility and therefore the verdict, has been accepted.

4.6.4. Story grammars

Two approaches have dominated the field of story-schema ie, story grammars and causal chain analyses (Van Dijk, 1980). Story grammars consist of sets of rewrite rules defining the type of information filling the 'slots' in the story schema. Additionally, the grammars dictate the order in which the 'slotted' information may occur (Mandler and Johnson, 1977). Story grammars have their roots in generative transformational linguistics. Hence, to evaluate the adequacy of these grammars the criteria for the assessment of formal grammars must be used. Since there is an added claim that story grammars are accurate theories of the memory representations of discourse, their efficacy in this realm should also be evaluated (Black and Bower, 1980). Black and Bower have conducted a comprehensive assessment of this nature. They compare the relative adequacy of the two main types of story grammars available. The first type is the context free phrase structure grammar - C F G - (Mandler and Johnson, 1977; Rumelhart, 1977; Thorndyke, 1977). The second type is the finite state grammar - F S G - (Stein and Glenn, 1978). The central factor distinguishing C F G's from F S G's, is that C F G's have a self-embedding property and F S G's do not (Black and Bower, 1980). Stories that illustrate the self-embedding property contain 'successive, dependent sub-goals' (Black and Bower, 1980: 229). To demonstrate this point, let us consider the story of the Old Farmer that has been used in numerous story grammar experiments. In this story, a farmer has the central goal of wanting to get his donkey into a shed. In order to achieve this macro-level goal, the farmer develops numerous sub-goals. These sub-goals are attempts to overcome conditions that prevent the attainment of the macro-level goal. For example, he asks his dog to bark at the donkey. When the dog refuses,

he asks the cat to scratch the dog, thereby getting the dog to bark at the donkey, and so on. Each of these sub-goals is derived from the failure of an attempt to achieve another sub-goal or the main goal. Therefore, the goals are embedded or conditionally related to one another. Since a large majority of stories are of this kind, the conclusion drawn by the two authors at this point, is that story grammars *must be* of the C F G - type ie, they must include rules for embedded goals. By implication, all story grammars that are F S G's are inadequate formal grammars (Mandler and Johnson, 1977; Rumelhart, 1977; Thorndyke, 1977).

The disturbing fact is then raised, that C F G's are also not adequate formal grammars for representing stories (Chomsky, 1965). The use of C F G's prevents the representation of discontinuous story constituents ie, the case when a set of goal related events are presented that are interrupted by the occurrence of some unrelated event(s), but later the story returns to the first set of events (Black and Bower, 1980). For example, the story fragment of:

- (i) Mary was at the laundromat;
- (ii) there she met Clara, who asked Mary to go and fetch Clara's children from the play-school;
- (iii) when Mary returned she completed her laundry.

The fragment denoted as (ii) is a discontinuous story constituent. (i) and (iii) are continuous constituents. C F G's should contain separate rules for dealing with interruptions that are related and those that are unrelated to the existing flow of story constituents, at any one time:

In other words, the rules should be sensitive to the context. But if they are, the grammar cannot be context free.

(Black and Bower, 1980: 230)

Hence, existing story grammars are not adequate as formal, theoretical grammars (Black and Bower, 1980).

At the second level of evaluation, the question to be answered is whether existing story grammars are empirically adequate theories of memory for story information. The answer is once again a disappointing negative. Story grammars are overgeneralized models that do not serve to differentiate the memory structure for stories, from the memory structures for other forms of discourse, like procedural expositions (Graesser, 1978). Story grammars have failed another test of empirical efficacy (Black, 1977). This latter study included a comparison of the predictive power of four of the main story grammars ie, Mandler and Johnson (1977), Rumelhart (1977), Stein and Glenn (1978), Thorndyke (1977), and a causal chain theory ie, Schank (1975).

Story grammars predict that the macro-propositions most frequently recalled are those of the Setting, Episodes and Resolutions (Mandler and Johnson, 1977; Thorndyke, 1977). The hypothesis from causal chain theory is that those events and states having multiple causal connections to other events and states in a story, are best recalled (Schank and Abelson, 1977) ie, those events and states that form a causal chain in a story. Black and Bower used stepwise regression to assess the relative efficacy of the story grammar - macro-structures as compared to the causal chain macro-structure (Black and Bower, 1980). The finding was that:

... the Schank causal chain was still the best predictor but it was always improved if it was combined with some 'hierarchy' variable.

(Black and Bower, 1980: 235)

The model of memory for stories chosen for this thesis combines a causal chain analysis with a hierarchical representation ie, the hierarchical model comprising the four levels of causal chains, scripts, plans/goals and themes (Schank and Abelson, 1977).

It is proposed that the protagonist in a story is a *goal-oriented, problem solver* (Newell and Simon, 1972). The memory representation is a hierarchy of *states that are changed by actions or events*. All of these constituent states and actions are related to the solving of some *high level problem* ie, to the protagonist attaining some overall goal which involves a state change. This central goal is represented at the highest macro-structural level of the memory hierarchy, as a single state change ie, STATE (A) ACTION (1) STATE (B). The protagonists' central goal is determined by their interpersonal role and/or life *themes* eg, the role theme of Robber predicts the central goal of gaining control of another's property. The corresponding highest level state change is the change of the protagonists' state from that of not having control of another's property, to that of having control of another's property. The highest level event 'causing' this state change, is the PTRANS of another's property to the protagonist. The next level of representation comprises the *plans* and *subgoals* that facilitate this highest level state change ie, the actions that lead up to the PTRANS of another's property to the protagonist (see Appendices I - III). For example, the ordered sets of actions (plans) that attain the subgoals of threatening and overpowering another, and stealing their property. The next level of the hierarchy, consists of those actions that frequently occur in fixed sequences to attain certain plans and subgoals ie, scripted activities eg, the actions comprising a 'stick-up'. The lowest level is that of the detailed primitive acts that constitute the scripted and non-scripted

plans and goals eg, the PTRANS of the protagonist to the victim, the PTRANS of the protagonists' club to the victims' head, etc. The prediction is that when the task is to recall entire stories, the macro-propositions best retrieved are those higher in the macro-schema ie, at the thematic and intentional levels (Schank and Abelson, 1977).

4.6.5. Criticisms

The hierarchical macro-schematic model proposed by Schank and Abelson (1977) may be evaluated using the criteria of plausibility, descriptive potential, predictive efficacy and testibility. Since the critical evaluation of schema-theory in general is accurately applicable to this particular model, the assessment will not be repeated here. (Readers are referred to section 4.3. on pages 49 and 50). The conclusion drawn is the same ie, that Schank and Abelson's model is incomplete rather than inaccurate. Empirical research is necessary to test the hypotheses which it generates. In this study the general hypotheses that macro-schematic violations produce incomprehensibility was tested. In addition the secondary postulate that the higher level macro-propositions, ie, themes and goals/plans, play a more central role in comprehension, was also evaluated.

5. THE CONCEPTUAL CONTEXT

No matter how precisely a norm is written, nor how carefully a legal concept is defined, there is always a background of uncertainty and probability which cannot be removed by any deductive or apodictic method. The only solution is to employ the inventive art of finding points of view or 'common places' which being widely accepted, will help to fill the gaps, thus rendering the reasoning convincing and the conclusion acceptable.

(Santos, 1977: 15)

5.1. Introduction

Discourse is an incomplete set of semantic cues. It is abbreviated to prevent redundancy and prolixity (Black *et al*, 1978; Kintsch and Van Dijk, 1978; Thorndyke, 1977). The question is, how do receivers elaborate the 'skeleton' of semantic cues to derive a complete, semantic representation of discourse? To understand the full meaning of events in discourse, receivers must have general and specific knowledge of similar events (Charniak, 1977). The knowledge originates from direct and vicarious experiences and is stored in long term memory. This is the *conceptual context*. Receivers use this data store to *infer* additional information. They reconstruct a wholistic meaning from discourse cues (Schank and Lebowitz, 1980). Understanding is knowledge-based (Schank and Abelson, 1977).

5.2. Inference

The reader should reconsider that for any story to be coherent its propositions must be connected. Many of the interconnections are *not* explicated in the surface structure. Receivers infer the interconnections to promote coherency in understanding. The following two propositions are apparently disconnected:

- (i) John burnt his hand; and
- (ii) he forgot that the stove was on.

To connect (i) and (ii) readers infer (iii), that John placed his hand upon the stove (Schank and Abelson, 1977). Inferences are integrating mechanisms. To link macro-propositions into the macro-causal chain, receivers assess whether the *pre-conditions* for any event have been

explicated. If not, they form *semantic bridges* between incoming information and information that has already been received. This is *backward inferencing* (Schank, 1975; Thorndyke, 1976). Backward inferences provide information that is missing from the 'conceptualization holders' in the causal chain-schema (Schank and Abelson, 1977). Receivers *cannot* understand discourse when the reparative function of inferencing is not fulfilled. For example:

- (i) John went to the park;
- (ii) there he met a midget,
- (iii) he asked the midget for a mouse; and
- (iv) John picked up the hat and walked away.

Few receivers could connect these four segments into a meaningful causal chain (Schank and Abelson, 1977).

It may seem that receivers generate *a single* inference to connect disjointed information. In fact, receivers develop *a range* of possible inferential bridges. For example:

- (i) The teacher swung her metal ruler at Mary;
- (ii) the teacher missed Mary; and
- (iv) Mary's hand began to bleed.

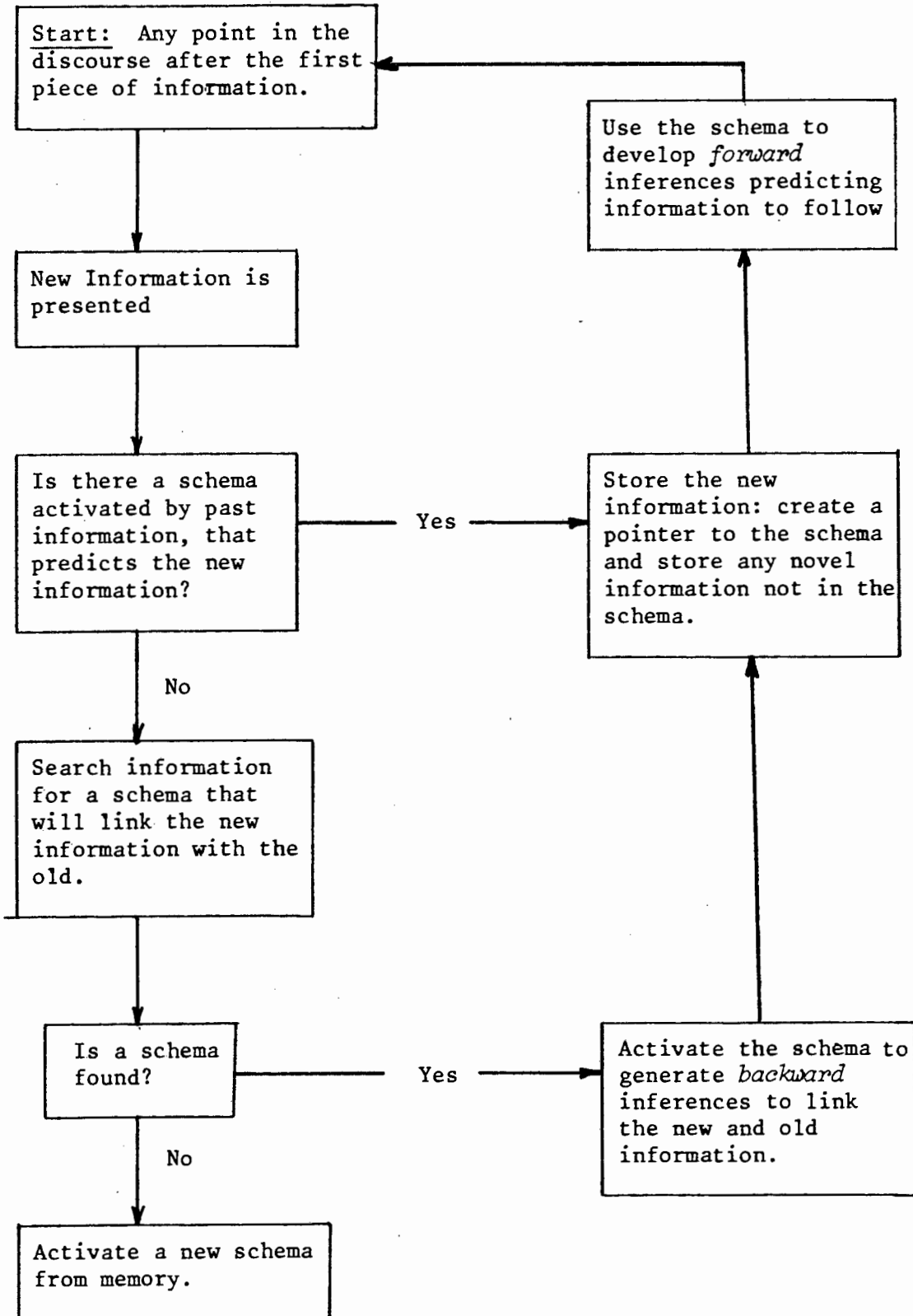
Segments (ii) and (iv) are disjointed. To connect these receivers may infer, (iiia) Mary got a fright and fell onto the floor, cutting her hand on the desk; or (iiib) Mary was so angry that she clenched her fist tightly and her fingernails bit into her palm; and so on. The inference chosen as a connector is the *most probable* one. Receivers are not concerned with how events could *conceivably* have happened, but with how events *usually* occur (Schank and Abelson, 1977). To decide what inference is most probable in any given situation, receivers use their world

knowledge about how things generally happen (Spiro, 1980). People function as 'naive psychologists' and 'naive physicists'. They follow general rules about people's motives, goals and the pre-conditions and consequences of goals. They are guided by rules regarding the dynamics of states and objects in reality (Heider, 1958).

Inferences fulfil a second, important function. They are used *predictively*. This is termed *forward inferencing*. Information received is used to predict the kind of information that receivers expect to *follow*. This reduces receivers' processing loads considerably. It is not necessary for receivers to conduct trial and error searches of general knowledge to find information that may proceed from the given data. Instead, inferences reduce the information predicted to that which is *most probable*.

The actual inferences generated from *specific* pieces of discourse, have not been predicted accurately (Kintsch and Van Dijk, 1978). The most recent theory is by Thorndyke (1976). It has a macro-structural base which complements the approach in this thesis. This model has been combined with the ideas of Schank and Abelson (1977) in Figure 5-1. (See Figure 5-1. p 71). In this study the problem of predicting inferences accurately was overcome. The common users reported their inferences. This data may be used to generate future hypotheses.

Figure 5-1. Inference Production



5.3 Script schema

5.3.1 Description

A script is a structure that describes the appropriate sequence of events in a particular context. A script is made up of slots and requirements about what can fill these slots. The structure is an interconnected whole, and what is in one slot affects what can be in another. Scripts handle stylized everyday situations. They are not subject to much-change, nor do they provide the apparatus for handling totally novel situations. Thus, a script is a predetermined, stereotyped sequence of actions that defines a well known situation. Scripts allow for new references to objects within them just as if these objects had been previously mentioned, objects within a script may take 'the' without explicit introduction because the script itself has already implicitly introduced them.

(Schank and Abelson, 1977: 41)

People acquire knowledge about their social environments. Gradually they extract those causally related events, roles, objects, pre-conditions, and consequences, that are common across a number of social events. These common features are the propositions that fill the script-schema 'slot'. Receivers have large numbers of scripts for understanding social events that are encountered frequently. Consider the well-used example of the social event of eating in a restaurant. In addition, receivers have specialized *tracks* within general scripts. For example, there are the tracks of the French Restaurant, the Hamburger Stand and the Chinese Take Away within the more general \$ RESTAURANT. Each track shares the majority of characteristics of the \$ RESTAURANT as well as some distinguishing characteristics (Schank and Abelson, 1977). Figure 5-2. is a representation of the propositions that fill the 'slots' of the restaurant script-schema. A script title is denoted as \$ RESTAURANT. (See Figure 5-2. p 73 and Appendix I).

Figure 5-2. \$ RESTAURANT

<i>Script:</i>	RESTUARANT	<i>Roles:</i>	S-Customer
<i>Track:</i>	Coffee Shop		W-Waiter
<i>Props:</i>	Tables		C-Cook
	Menu		M-Cashier
	F-Food		O-Owner
	Check		
	Money		

<i>Entry Conditions:</i>	S is hungry.	<i>Results:</i>	S has less money
	S has money.		O has more money
			S is not hungry
			S is pleased (optional)

Scene 1: Entering

S PTRANS S into restuarant
 S ATTEND eyes to tables
 S MBUILD where to sit
 S PTRANS S to table
 S MOVE S to sitting position

Scene 2: Ordering

(menu on table)	(W brings menu)	(S asks for menu)
S PTRANS menu to S		S MTRANS signal to W
		W PTRANS W to table
		S MTRANS 'need menu' to W
		W PTRANS W to menu
	W PTRANS W to table	
	W ATRANS menu to S	
		S MTRANS food list to CP(S)
		*S MBUILD choice of F
		S MTRANS signal to W
		W PTRANS W to table
		S MTRANS 'I want F' to W
	W PTRANS W to C	
	W MTRANS (ATRANS F) to C	
C MTRANS 'no F' to W		C DO (prepare F script)
W PTRANS W to S		to Scene 3
W MTRANS 'no F' to S		
(go back to*) or (go to Scene 4 at no pay path)		

Figure 5-2. \$ RESTAURANT (continued)*Scene 3: Eating*

W ATRANS F to W

W ATRANS F to S

S INGEST F

(Optionally return to Scene 2 to order more;
otherwise go to Scene 4)

Scene 4: Exiting

S MTRANS to W

(W ATRANS check to S)

W MOVE (write check)

W PTRANS W to S

W ATRANS check to S

S ATRANS tip to W

S PTRANS S to M

S ATRANS money to M

(no pay path): S PTRANS S to out of restuarant

(Schank and Abelson, 1977: 43/44)

Black *et al.*, (1979) have added that the characteristics of the props and roles are not static. Some are obligatory, some are bounded in range and some are optional. Consider for example the characteristics of the person who fulfills the scripted role of server. One obligatory characteristic is that the *server* be human. One characteristic that is bounded in range is that the server fall within the age limits of 15 to 45 years. An optimal variable is that the server may or may not be wearing a uniform.

Each of the four scenes consists of a separate causal chain. However, these event sequences are joined to form the central causal chain connecting the events of the *entire* script. Each scene is dominated by

a central *maincon*. This is the primitive act that must be performed to achieve the goal of each scene eg, the goal in the scene 2 is to order food from the server. The maincon is the primitive act of the MTRANS of the choice of food by the customer to the server. When receivers identify these maincons in discourse, they predict that a scripted activity may be occurring. A maincon in discourse functions as a *script header*. Receivers then match subsequent linguistic cues to the scripted information signalled by the script header. Should any of these linguistic cues correspond with the scripted data, they will also function as script headers eg, a prop, role, entry-condition or result. The relevant script is then activated as the source of knowledge for understanding. When two or more script headers are present, receivers use the script with confidence ie, as a *non-fleeting script*. When discourse contains only one script header receivers activate the script, but use it with little confidence. It is termed a *fleeting script* (Schank and Abelson, 1977). Receivers of discourse containing all of the maincons from the \$ RESTAURANT, would be confident that the \$ RESTAURANT would facilitate their understanding of the discourse (see Appendix IV for the range of script headers).

For example:

- (i) The driver of a bakery van entered the restaurant; and
- (iia) he had come to deliver cakes.

Cue (i) is the maincon for scene 1 of the \$ RESTAURANT ie, the PTRANS of a potential customer into the restaurant. This cue would act as a script header. The \$ RESTAURANT would be instantiated as a fleeting script, because cue (iia) does not match the other information in the \$ RESTAURANT. Were (iia) replaced with (iib), He sat down and ordered a hamburger; the \$ RESTAURANT would be activated as a non-fleeting script. (iib) matches the maincon of scene 2 of the \$ RESTAURANT ie, the MTRANS

of the customer's choice of food to the server.

Scripts are economically efficient, knowledge stores. It is well established empirically that if information can be derived from existing knowledge, it will not be re-stored (Spiro and Esposito, 1977; Spiro *et al*, 1981). The memory representation resulting from the use of a script is merely a *pointer* to the script. Scripted information is understood as a single, conceptual unit. Only information that is *not* predicted by the script is stored explicitly. This is unexpected or novel data (Schank and Abelson, 1977). This improves the speed of comprehension by reducing the cognitive effort expended by receivers.

5.3.2 Rationale

Scripts characterize some of the information presented in testimonies. Testimonial information concerns everyday, social events, many of which are stereotypical in nature but have some novel content eg, a testimony concerned two accuseds taking a train ride. During this journey, they allegedly stole one of the passenger's watches. Receivers attempting to understand this sequence of events used the \$ TRAIN RIDE. The memory representation included a pointer to the \$ TRAIN RIDE, plus the novel information regarding the theft. In this study, scripts appear to be plausible and descriptive concepts. Additionally, the use of scripts in comprehension has been validated empirically, particularly when the task is evaluative in nature (Spiro, 1980). This investigation considered the task of evaluating the comprehensibility and credibility of testimony.

Hence it may be postulated, that in this study both the common users and the magistrates utilized scripted information in comprehending testimony. Of greater significance is the controversial finding, that receivers do not distinguish the information they *infer* from scripts, from the information that is *explicated* in discourse (Brewer, 1977; Graesser *et al*, 1980). When magistrates/common users assess the credibility/comprehensibility of a testimony, it is their memory representations of the testimony that they rely upon. These representations include inferred information. Therefore, it is necessary to use the concept of scripts to predict the kinds of inferences that receivers may develop, in comprehending and assessing testimony.

5.3.3 Criticisms

The theory of scripts is incomplete (Black *et al*, 1979). There is little written, explaining how receivers generate new scripts, how scripts are used in combination, and how long an activated script continues to influence comprehension (Spiro, 1980). Den Uyl and Van Oostendorp (1980) question the assumption that scripts are used in the same way across situations. Task differences cause differences in the use of scripted information during comprehension (Freedle and Carroll, 1972). Schank and Abelson propose that inferences are made immediately following the activation of a script. These inferences are used to predict the nature and order of the information to follow (Schank and Abelson, 1977). There is an alternate explanation ie, that receivers delay their inferencing until a script is de-activated, to prevent an 'inferential overload'. Additionally, scripts may be used to predict the actual syntax of subsequent information rather than the mere order and kind of data (Den Uyl and Van Oostendorp, 1980).

A more significant criticism is that the introspective procedure used to detail the contents of scripts is inadequate. Introspection does not access tacit and/or unconscious information. For example, the introspective technique would not yield the scripted information of how far away the waiter is expected to stand when taking an order in a restaurant (Black *et al*, 1979).

5.4 Intentional schema

5.4.1 Introduction

Scripts are proposed as the source of knowledge that receivers use to understand common-place events. Since receivers live in a dynamic, social environment, it is most improbable that every situation encountered is a stereotypical, scripted event. Thus, there is a need for receivers to possess sources of more general knowledge that enable them to comprehend *novel or unexpected* sets of events ie, activities which they may not have experienced frequently. This general knowledge consists of rules regarding the goals and plans that shape human behaviour. The behaviourist approach to human behaviour assumes that the people comprising a society, are influenced by the particular set of rewards and punishments that characterize that society, at any given point in time. People's behaviour exhibits common patterns, because it is directed to achieving the same set of rewards and to avoiding the same set of punishments (Skinner, 1938). Receivers attempting to understand behaviour utilize knowledge of the plans that people construct to attain goals ie, to gain rewards and avoid punishments (Schank and Abelson, 1977). Such knowledge allows receivers to infer causal connections among otherwise unrelated objects, states and actions (Black and Bower, 1980).

A plan explains how any given state or event was prerequisite for, or derivative from, another state or event.

(Schank and Abelson, 1977: 70)

At the fourth and fifth levels of comprehension, receivers' first task is to recognize the goals of characters in a story. They then deduce which method, out of the many possible methods, characters pursued to achieve their goals.

5.4.2 Plans and goals

Receivers' knowledge of plans and goals has a schematic structure in memory ie, it is an intentional-schema. It includes general rules about plans (see Appendix V). Many taxonomies of goals have been developed, but few are comprehensive or systematic (Schank and Abelson, 1977). The taxonomy of Schank and Abelson (1977) is limited, but heuristically valuable. It is necessary to include such a taxonomy in a theory of discourse comprehension, because goals are seldom explicated in discourse. Receivers must impute goals. The taxonomy includes five high-order goals ie, satisfaction, enjoyment, achievement, preservation and coping with crises. Each of these main goals has a high level plan to achieve the goal (see Appendix VI). Each is sub-divided into a set of lower order sub-goals of two kinds ie, instrumental goals or I-goals, and delta goals or D-goals. I-goals may be pursued without active planning. This is because the plans to achieve I-goals are *fixed sequences* of familiar activities. I-goals are attained by *scripted activities*. Instead of constructing a specific plan to achieve an I-goal, a scripted activity may be used (Schank and Abelson, 1977). For example, the I-goal of making food appetizing is a sub-goal of the main-goal, the satisfaction of hunger. This I-goal may be achieved by using stereotyped cooking activities.

However, there are goals for which no scripted activity exists as a plan to achieve the goals. These are the five D-goals. First, the goal of changing one's state of proximity, or D-PROX. Second, the changing of the physical control of something, or D-CONT. Third, the acquisition of knowledge, or D-KNOW. Fourth, the gaining of social control over something, or D-SOCCONT. Fifth and finally, the goal which involves gaining another person's co-operation in order to pursue a goal, or D-AGENCY. A set of *plan boxes* is associated with each D-goal. The plan boxes are a set of actions to achieve the D-goals. All of the D-goals share the same seven plan boxes. The plan box that is most suitable for achieving any particular D-goal *in a given situation*, is chosen from this range. They are collectively termed the persuade-plan boxes (see Appendix VII). The ASK-plan box involves attaining a desired object or action by asking a person to give one the object or to perform the action. The INVOKE THEME-plan box involves making a person aware of some interpersonal relationship that will make them more likely to give one a desired object, or perform a desired action. The INFORM REASON-plan box involves informing a person of the positive consequences that they will experience if they provide the desired object, or perform the desired action; and the negative consequences to the asker of it not being provided. The BARGAIN OBJECT-plan box involves the asker offering the askee some object in exchange for some act and/or object. The BARGAIN FAVOUR-plan box involves the asker offering some favour to the askee in exchange for a **reciprocal favour**. The THREATEN-plan box involves the asker threatening the askee with some consequence that is negative for the askee. The OVERPOWER-plan box involves the asker taking the desired object or getting the askee to perform the desired behaviour, by the application of physical force to the askee. Should the first plan box fail to achieve

the D-goal, planners move to the next one in the sequence. They are not expected to avoid using plan boxes (Schank and Abelson, 1977). A final set of rules is proposed ie, the *expectancy rules* (Hemphill, 1973; Schank and Abelson, 1977). These detail the actions that characters will perform to obtain goals when in particular emotional and/or physical states (see Appendix VIII).

In conclusion D-goals, I-goals and expectancy rules facilitate predictions. Receivers consider the primitive acts, emotional and physical states in discourse, and infer the I-goals, D-goals, pre-conditions and plans that shape characters' behaviours. For example, receivers of a piece of discourse containing the primitive act of the MTRANS of information, would infer the D-goal of D-KNOW and the plan box of ASK. When an ASK plan box occurs in discourse, receivers may infer that at least two pre-conditions were present ie, that persons (A) and (B) were in close proximity during the activity, and that person (B) knew the topic (X) that person (A) was asking about.

5.4.3 Themes

At the fifth and final level of comprehension, data structures called *themes* organize highly generalized knowledge.

Themes, ... contain the background information upon which we base our predictions that *an individual* will have a certain goal.

(Schank and Abelson, 1977: 132)

Themes consist of groups of goals that any *one individual* may be more likely to pursue than another. This is due to some characteristic of the individual or their relationship to another individual. Themes are used to comprehend goals that are extremely implicit. There are three kinds of themes, *role themes*, *interpersonal themes* and *life themes*. People's

behaviour is shaped by the societal roles that they assume eg, the roles of garbage collector, doctor and parent. Receivers possess knowledge regarding the kinds of behaviours and the goals associated with particular social roles. For example, a garbage collector is expected to pursue the D-goal of D-PROX garbage (see Appendix IX).

Interpersonal relationships are characterized by sets of goals. For example, should there be an interpersonal theme between characters of a love relationship; receivers would understand the characters' behaviour in the light of the goals that they expect lovers to have. Thus, if one of the characters in the relationship were to be threatened by another character, the receiver would predict that the character who was not threatened, would try to prevent the threatened-character from the threat.

Finally, the third type of theme is the life theme. Life themes provide information about individuals' overall aims in life. People's life goals are expected to shape *all* of their behaviour to some extent. Take for example, a character who has the life theme of becoming rich. Discourse information regarding this character's attempts to build a good career, would be understood in the light of his/her higher, general life theme. Any single life theme may generate an almost infinite number of possible sub-goals and actions to attain such goals. In addition, the macro-level nature of life themes is illustrated by the 'fact' that any character may operate under a combination of life themes. Life themes include a range of personal qualities like loyalty and honesty; ambitions; life styles, like the hippie style and the luxury style; political attitudes; desires for social approval and for physical sensation. Only those receivers who have an in-depth knowledge of a sender, may use life themes to understand the

senders' behaviour accurately (Schank and Abelson, 1977). The receivers in this study could not be expected to have detailed knowledge of the characters in the testimonies that they comprehended. It was postulated, that they would not use life themes in understanding testimonies.

5.5 Summary conclusion

To conclude, macro-propositions are constructed from the *explicit* linguistic cues present in discourse, in combination with the *implicit* inferences generated from knowledge stored in the long term memory of receivers. The macro-structure that forms the overall framework into which the macro-propositions are 'slotted', is that proposed by Schank and Abelson (1977). It is a hierarchy of state changes that begins at the highest level of generality and culminates in the highest level of specificity. The state changes characterize the various goals and sub-goals of the protagonist in a story. At the highest level of the macro-structure the state changes are understood by reference to thematic data. As one descends the levels of the macro-structure, the macro-propositions are formed by reference to intentional data structures, then scriptal data structures, and finally causal semantic data structures. The **micro**-propositions are constructed from knowledge of primitive actions. The particular level at which receivers understand a piece of discourse depends on their general knowledge (Schank and Lebowitz, 1980). The processing of discourse that begins at the highest level of generality ie, at the level of thematic plans and goals; is termed 'top-down' processing. This is possible when the highest level goals and plans are recognized by a receiver, at an *early point* in understanding discourse. The use of such data structures at an early point in processing shapes the entire memory representation that a receiver constructs, to comprehend the rest of a piece of discourse. In contrast, there is 'bottom-up' processing. This occurs when the plans

and goals of discourse characters are difficult for a receiver to predict. Generally, this occurs in stories having unexpected deviations in the plans, obstacles to goal attainment and highly implicit or ambiguous goals and plans. Hence, receivers process discourse using lower levels of the macro-structure. 'Bottom-up' processing involves greater cognitive effort and an increased time for comprehension. In addition, the resultant memory representation may have a lower level of overall causal coherence (Black and Bower, 1980). Ultimately a quote captures the gist of this chapter:

... understandability is a function of the place of a piece of information in context. A script is understandable as a particular realization of a plan. A plan is sensible only if it leads to some desired goal. And, a goal is understandable if it is a part of a large theme.

(Schank and Abelson, 1977: 132)

6. THE DISCOURSE, CONCEPTUAL AND SITUATIONAL CONTEXTS

The goodness of certain texts is determined by their fit with common sense experience and general knowledge of the world.

(Spiro, 1980: 323)

6.1. Introduction

Readers have been introduced to the discourse and conceptual factors that shape the meaning of testimony. This is the process of general comprehension. The meaning interpreted also depends upon the *task* to be performed by receivers following comprehension (Graesser *et al*, 1980). This is a situational factor. In this study, the situation is the courtroom and the task is the assessment of comprehensibility and credibility. The discussion is now turned to considering the process of comprehension that facilitates comprehensibility and credibility judgements.

6.2. Norms of interpretation

6.2.1. Whose norms?

Ideally, the meaning that *receivers reconstruct* from testimony is the meaning that was *intended* by the *sender* of the message. In 'real' speech situations like the courtroom, the attainment of this ideal match between the intended and interpreted meanings is *not* certain. Discrepancies arise because receivers understand the *inferred* meaning and not merely the *literal* meaning of testimony (Bennett and Feldman, 1981). The central premise here is that similarity between the intended and interpreted meanings is determined by the well-formedness of testimony. Incoherency and incomprehensibility result from poorly structured testimony (Bower, 1976). In fact, the criterion distinguishing meaningful discourse from 'nonsense', is coherency of structure. It is necessary to detail the characteristics of well-formedness. Few systematic rules are available for assessing structural well-formedness (Kerelson, 1980). The criteria used in this study are the *receivers'* norms of well-formedness ie, the rules constituting the schema used in discourse processing.

An assumption fundamental to schema theory is that the norms shaping the production of discourse by senders, are the same norms used by receivers to interpret the meaning of discourse ie, the norms of production and the norms of interpretation are *identical*. The actual validity of this assumption is controversial (Van Dijk, 1980). The *actual* validity is not relevant here. The postulate that receivers interpret discourse *as if* it has been constructed according to the ideal norms of production is of primary significance (Atkinson and Drew, 1979). In practice the norms of production and the norms of interpretation are *inextricably interrelated*.

A corollary to this assumption is that poorly structured discourse violates the norms of interpretation. Such violations impede receivers in developing coherent memory representations. Thus, receivers *perceive* discourse as violating the norms of production. A second corollary is postulated for the courtroom ie, that receivers perceive structural violations to be *implausible* ie, violations act as cues to receivers that senders are *deceptive*. Thus, the degree to which testimony is ill-formed (comprehensible) is inversely related to its perceived credibility (Bennett and Feldman, 1981). It is the relative credibility of testimonies that determines the final verdict. Magistrates' perceptions of the structural well-formedness (comprehensibility) of testimonies shapes the outcomes of criminal trials.

6.2.2. What norms?

The field of the ethnography of speaking has contributed to our understanding of how variations in speech are produced by differences in the goals to be attained *in particular situations* (Hymes, 1971; Johnson, 1970). This approach embodies the notion of *communicative performance* ie, that language users *modify* the rules they use to produce and interpret language, to achieve the goals of *particular* speech situations. It is unfortunate that much of the research is not relevant to this investigation. The cognitive rules receivers apply to the specific task of assessing credibility, have not been examined. However, Grice (1975) has formulated four general rules. These have been modified to analyse communication in the courtroom. They are social norms governing the content of messages. A social norm is a stable, shared conception of the behaviour appropriate to a given context. The norms dictate the behaviour people *expect* of themselves and others. Norms are imperative for maintaining 'cognitive control' over the environment because they organize experiences of reality (Giles *et al*,

1979). Conversation is a quasi-contractual matter (Danet, 1980).

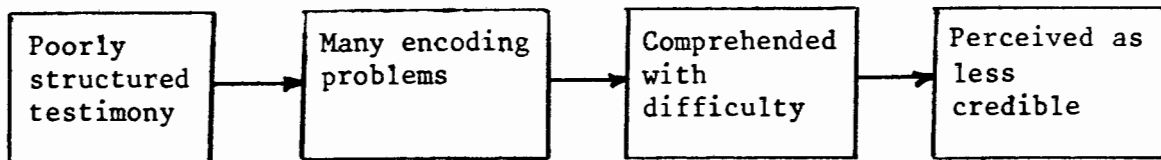
Language producers must adhere to the norms to communicate effectively (Grice, 1975). Should they violate the norms, receivers experience difficulties understanding conversation. The general norms are:

- *Quantity*: witnesses should construct testimony that includes *only* those linguistic cues necessary for receivers to derive a single, coherent interpretation of meaning. When there is insufficient information, the meaning interpreted is *incomplete*. When there is superfluous information, the meaning interpreted becomes *overly complex*.
- *Manner*: the linguistic cues constituting testimony should enable receivers to derive a single, wholistic meaning that is unambiguous. There should be *consistency* in the meaning cued by a message.
- *Relation*: witnesses should provide a set of linguistic cues that are clearly and unambiguously related to a central theme ie, the point to be made by a testimony. Information that is not related to the central gist of the message should not be included. It is *irrelevant* and thus inconsistent.
- *Quality*: witnesses should 'tell the truth'. Receivers should be able to believe witnesses ie, witnesses should refrain from purposefully distorting the information transmitted.

It is proposed that magistrates evaluate the well-formedness (comprehensibility) of testimony whilst comprehending, by using the first three criteria ie, quantity,

manner and relation. This evaluation enables their assessment of the fourth criterion of credibility:

Figure 6-1. Process Proposed



6.3. Norm violation

The question foremost is *why* and *how* structural 'defects' cause incomprehensibility? In comprehending each case, receivers form coherent memory representations of the meaning conveyed by testimonies. The development of coherent representations requires receivers to connect the many propositions into giant, causal chains. The schema used to understand testimonies predict the most likely causal connections among propositions. Structural 'defects' are those parts of testimonies that conform imperfectly with the schematic predictions. Structural ambiguities are violations of the norms of completeness and consistency. Violations of completeness occur when testimony fails to provide *sufficient* information for the development of a single causal chain. This is Grice's first norm of quantity (Grice, 1975). Receivers use activated schemas to assess when discourse is incomplete. Schemas dictate the quantity and quality of the missing information that prevents the formation of a coherent, causally-connected memory representation (Schank and Abelson, 1977). Receivers do *not* tolerate incompleteness in comprehension. They use the activated schema to

generate the missing information. When completeness violations are left 'unrepaired' ie, when receivers do not insert bridging inferences, the information becomes inconsistent. Incompleteness *causes* inconsistency. Grice's second and third norms are *consistency* criteria ie, manner and relation (Grice, 1975). There are two kinds of consistency violations: First, there are violations occurring when propositions *explicated* at one point in testimony contradict with those delivered at another point. The two sets of information are mutually exclusive. Second, there are conflicts between the information *explicated* in testimony and the information *inferred* from schema used in processing. The latter type are termed *reconciliation errors* (Spiro, 1980). The three types of violations have the same final effect on processing ie, they inhibit the development of a single causal chain connecting the propositions comprising testimony. The schema used at any point in processing are differentiated according to their level in the hierarchical memory representation. The first level is the micro-schema of primitive action concepts; the second, is the causal chain macro-schema level; the third is the scriptal macro-schema level; the fourth is the intentional macro-schema level; and the last, is the thematic macro-schema level. Violations may disrupt the formation of receivers' memory representation at any of these schematic levels.

The higher the level of the violation, the more serious is the disruption of comprehension (Black and Bower, 1980). High level schematic violations ie, themes and goals/plans, inhibit the formation of the *critical causal chain* that connects the lowest level, successful state change to the highest level, desired state change (Schank and Abelson, 1977).

Consider the following three segments:

- (i) Joe asked Irving if he knew where Joe could get some honey;
- (ii) Irving said that he did not know;

(iii) Joe ate the honey.

Receivers activate the intentional schema that subsumes segment (i) ie, the plan box ASK that is connected to the goals of D-CONT and D-PROX. Receivers predict that the failure of the plan box ASK in segment (ii) will cause the substitution of another plan to achieve the D-CONT goal in segment (iii). However, no alternate plan is explicated. This is a violation of completeness. It causes an inconsistency between segments (ii) and (iii), because the pre-conditions for the success of D-CONT in segment (iii) have not been provided ie, the pre-condition of Joe finding an alternate source of honey. To 'repair' this violation receivers would infer that Joe did find such a source.

Testimony that violates the norms of consistency and completeness increases the use of reparative inferencing. Inferencing requires receivers to expend cognitive effort. This increases the time taken to comprehend (Kintsch *et al*, 1977). The result is that receivers assign fewer processing resources to the storage of *detailed* information. At recall, receivers do not distinguish between information that was *explicated* in testimony and that which was *inferred* by the receivers themselves (Mandler and Johnson, 1977; Pratt *et al*, 1982). The meaning interpreted differs greatly from the meaning intended:

A listener may misunderstand what a speaker means because the message failed to identify uniquely whatever the speaker had in mind.

(Robinson and Robinson, 1982: 268)

In addition, as the number of inferences *increase* their predictive accuracy *decreases* (Schank and Abelson, 1977). Receivers are more likely to make reconciliation errors (Spiro, 1980). The consequence is that the

intended differs from the meaning interpreted. This is because poorly structured testimony does not cue the schema information intended by witnesses, in an unambiguous fashion. Therefore, it is the cognitive strategies of receivers that determine the meaning interpreted. Bennett and Feldman (1981) have termed this *structural ambiguity*. They found that structurally ambiguous testimonies are perceived as implausible (Bennett and Feldman, 1981). In contrast, well-formed (comprehensible) testimonies are understood with ease. This enhances persuasive efficacy (Eagly and Warren, 1976).

6.4. Credibility

The question remains as to why structural violations lower the credibility of testimony? Violations of schematic expectations are atypical or novel occurrences. *Von Restorff's effect* states that atypical occurrences are well encoded and recalled (Spiro and Sherif, 1975). This effect has been well demonstrated in the recall of stories (Black *et al*, 1979; Graesser *et al*, 1979; Schank, 1975; Thorndyke and Yekovich, 1979). Testimony has a narrative structure. A magistrate's task is to assess the credibility of testimony. Thus, it is logical that magistrates encode structural violations as atypical phenomena and that they perceive these as cues that signal deception on the part of witnesses:

This suggests a listener's maxim in situations such as adjudications that require empirical judgements to be made about accounts: Descriptions are taken literally. Terms that would have to be changed in order to produce a sensible version of an incident are regarded as problematic. They become possible indicators of 'made up' versions of reality.

(Bennett and Feldman, 1981: 12)

This should not imply that witnesses have to produce perfectly-formed testimony to achieve credibility. Well-formedness is continuous rather

than categorical. Receivers do tolerate some degree of ill-formedness in testimony before perceiving it to be incredible. However, the exact 'quantity' has yet to be measured.

6.5. Questioning

In chapter two it was emphasized that questioning shapes the structure of testimony significantly. The prosecutor and magistrate are the receivers in a criminal trial. They monitor their levels of comprehension continually (Freedle and Carroll, 1972). When a violation occurs, these receivers attempt to clarify the problem. Clarification is sought by questioning witnesses. Should witnesses provide *causal explanations* in response to questioning, violations are clarified (Danet, 1980). If witnesses fail to provide causal explanations after recursive questioning, violations remain. These violations are 'tagged' in receivers' memories as indicators of deception. It is important to note that:

Explanations cannot be divorced from the context in which they occur, the listener's perspective is all important in terms of initiating questioning, seeking an answer and feeling satisfied with an explanation.

(Kidd and Amabile, 1981: 313)

The prosecutor's function is to lower the credibility of witnesses for the defence. He/she questions defence witnesses to achieve this aim, because recursive questioning *emphasizes* the prosecutor's dissatisfaction with witnesses clarifications. This process causes violations to remain as deception cues. At worst, the persistent use of questioning may *create* violations when witnesses become over anxious (Bennett and Feldman, 1981). Therefore, accused may occupy a disadvantaged role relative to complainants, in undefended cases. This hypothesis was tested in this study.

7. ETHNICITY AND CREDIBILITY

Obviously judicial decisions are not made uniformly. Decisions are made according to a host of extra-legal factors, including the age of the offender, his/her race and social class. Perhaps the most obvious example of judicial discretion occurs in the handling of cases of minority groups. Negroes, in comparison to whites, are convicted with lesser evidence and sentenced to more severe punishments.

(Quinney, 1977: 42)

7.1. Introduction

Several aims of this study are interdependent. The first is to investigate whether comprehensible testimonies are perceived as being more credible than incomprehensible. The second aim is contingent on this finding ie, to assess whether receivers of a majority group status are more likely to perceive testimonies as incomprehensible when witnesses are of a minority group status. The deduction could then be made that minority-status witnesses are disadvantaged, because they run a higher risk of being judged incredible. This would mean that minority-status complainants are more likely to 'lose' cases and accused are more likely to be convicted. The grave claim would then be that the administration of justice is *not impartial* ie, that discriminatory practices exist in the application of law to different ethnic groups.

It is not known whether minority-status persons commit more offences than majority-status persons. Minority-status persons are over represented in the official, crime statistics of most countries. This is rejected as a 'statistical mirage' resulting from the underreporting of majority group offences (McNeely and Pope, 1981). One contemporary trend is to assume that all groups are equally likely to break the law (Chambliss and Siedman,

1971) but that sanctions are more likely to be imposed on people occupying lower social positions. Sanctions are imposed from arrest through to the passing of sentence. In addition, those in lower social positions experience more severe sanctions when these are imposed (Hagan, 1974).

7.2. Disparities in sentencing

The study of discriminatory practices in the legal system has been dominated by investigations of disparities in the sentencing of accused from different ethnic and socio-economic groups. Hagan (1974) conducted a comprehensive review of 20 of the most frequently cited, North American studies. He maintained that:

For the moment, we can only conclude that this version of the 'racial hypothesis' remains open to some doubt.
(Hagan, 1974: 368)

The research has been criticized for a number of fundamental shortcomings, making this disappointing conclusion necessary: Research has utilized unrepresentative samples. There has been an over inclusion of capital offences tried before juries, in the Southern states of America. The result has been the neglect of non-capital offences, tried before judges and magistrates, in racially 'more neutral' regions. The majority of the work is methodologically unsound. Few studies have taken account of the confounding effects of prior convictions and types of offences. A large percentage of sentencing disparity 'disappears' when these effects are controlled (Hogarth, 1971; Hagan, 1974). However, more recent work that is methodologically sound, demonstrates discrimination in sentencing practices (Lizotte, 1978).

A survey of South African studies emphasized the paucity of research at

all points in the criminal justice system. South African research into sentencing disparities demonstrates similar shortcomings to those that have been problematic in North American work. The South African field has been dominated by studies of the higher courts ie, the Supreme Courts and capital offences (Olmesdahl and Steytler, 1983). One particularly significant finding is that minority-status witnesses are *most disadvantaged in inter-racial cases*. In fact, when the offence is *intra-racial*, 'black' accused may receive *more lenient* sentences than 'white' accused (Rhadamanthus, 1970). The explanation is that 'white' decision-makers accept 'black criminality' as being 'expected of a lower class', as long as 'they keep it among themselves' (Lizotte, 1978). The almost exclusive focus on disparities in sentencing has had the negative effect of removing attention from the actual outcomes of trials. The outcome is of *primary* relevance to the subsequent lives of accused. The pressing issue of *whether* and *how* certain processes operate to the systematic disadvantage of certain social groups, by affecting verdicts, remains a controversy unelucidated by empirical findings (Bennett and Feldman, 1981).

This study was designed to overcome the shortcomings of previous research. The focus is on verdicts delivered in non-capital cases, heard by magistrates in the Cape Town Regional Magistrates' courts.

7.3. Ethnicity and socio-economic status

Ethnic 'labels' may be assigned to people who perceive *themselves*, and who are treated by the wider society as belonging to a particular ethnic group (Hagan and Albonetti, 1982). Traditionally, people have been classified as belonging to a particular social class in a graded hierarchy of socio-economic status. The criteria used have been fathers' occupation and educational standards, subjects' occupations and educational standards,

speech markers, areas of residence and so on (Higgins, 1976). The alternative is the Neo-Marxian, relational criteria of the subjects' relations to the means of production, to the ownership of the means of production and to labour power (Hagan and Albonetti, 1982). This latter approach assumes that social classes are not internally homogenous nor clearly separable.

The historical trend is one of ineptitude in understanding the relationship between ethnicity and socio-economic status (McNeely and Pope, 1981). It is unfortunate that this study falls prey to this criticism. The insurmountable obstacle preventing the classification of witnesses into social classes, was the lack of information available. Court records were the *sole* data source. These did *not* contain consistent indicators facilitating a traditional or Neo-Marxian social class categorization. No difficulty was experienced in assigning ethnic group 'labels' to witnesses. South African citizens are classified officially as members of one of four race groups ie, 'white', 'coloured', 'indian' and 'black'. The term ethnic group has been substituted for race group. The former emphasizes the socio-cultural instead of the biological differences between groups. Court records emphasize the official ethnic classifications of witnesses. Additionally, there is no doubt that witnesses perceive themselves and are treated by others, as members of their officially classified ethnic groups. Socio-political and geographic divisions have been created among ethnic groups. These have promoted distinguishable, informal relations between members of different ethnic groups. The following assumption was necessary, although not ideal: 'White' South Africans are socially, politically and economically more advantaged than 'non-white' South Africans. 'Whites' were classified as members of

a higher socio-economic class than 'non-whites'. Hence, 'white' witnesses were assumed to be of a relatively higher socio-economic status than 'coloured' witnesses.

7.4. Rationale : South Africa

7.4.1. Societal level

The relevant question is why disparities in verdicts are expected in the South African legal context? Research has demonstrated ethnic discrimination in sentencing in countries, regions and periods in which inter-ethnic hostility has been significant eg, in the Southern States of America during the fifties. South Africa as a whole, has an internationally recognised history of interracial conflict at the social, political and economic levels. In particular, 1983 and 1984 have been years in which interracial conflict has reached significant proportions. Noteworthy events mark these years eg, the boycotts of educational institutions by 'non-whites' in efforts to demonstrate their rejection of inferior standards of education; and the election of 'coloureds' and 'indians' to a tripartite parliament which initiated demonstrations to oppose the exclusion of 'blacks' from this share in the political power in South Africa. A comprehensive list of events would constitute a substantial book. Suffice it to say that since this study was conducted during a period of inter-ethnic 'unrest', it was expected to illustrate ethnic discrimination. Additionally, academic authors continue to emphasize the prejudiced, ethnocentric attitudes and behaviours of 'white' toward 'non-white' South Africans (Foster, 1984). Thus, it is postulated that 'coloured' witnesses may be disadvantaged in South African trials conducted by 'white' authority figures.

7.4.2. Trial level

Although official crime statistics should be regarded with the necessary degree of scepticism, these are useful indicators of possible sources of disadvantaging (Van Zyl Smit, 1983). During the official statistical year from June 1981 to June 1982, 75.37% of those convicted in South African courts were from the lowest educational strata (Official Statistics of Offences, 1981/82). Since educational standard is an indicator of social class, this suggests that South Africans of low socio-economic status may be disadvantaged in the legal system (Higgins, 1976). Since statistics are not available, it is not possible to calculate the proportions of lowly educated, convicted accused in each ethnic group. However, since the majority of 'non-white' South Africans are 'poorly educated' relative to 'white' South Africans, one may deduce that the majority of the 'poorly educated', convicted accused are 'non-white'.

Disadvantaging may also result from the lack of legal representation in 'non-white' cases. In general, 'non-whites' are economically less advantaged than 'whites'. This explains the lower use of legal representation by 'non-whites'. Although legal aid is offered by the State, the psychological obstacles of fear, hopelessness and a lack of information, often prevent the use of these resources by minority group members (Zemans, 1979). A study of South African accused showed that 83% of undefended accused had very little knowledge of court proceedings, 66% were unaware of State legal aid, and 63% did not believe that they would improve their lot in court by using State legal aid:

There can be no doubt that the unrepresented defendant often suffers from severe disadvantages. He is scared, inarticulate, unfamiliar with the procedure and commonly unable to understand what is going on.

(Samuel, 1971: 15)

A survey of the Cape Town Regional Magistrates' court records showed that only 21% of 'coloured' accused were represented. In contrast, 58% of 'white' accused were represented. This is a ratio of 1 : 2.76 (Slabbert, 1981). More significantly, it was found that undefended accused run a higher risk of being convicted than defended accused (Slabbert, 1981), North American research provides similar findings (Lizotte, 1978). Therefore, 'coloured' undefended accused are relatively disadvantaged in criminal trials. To conclude, persons of minority group status appear to be disadvantaged in accusatorial South African trials. This may not be the case in inquisitorial proceedings where witnesses present their testimony in an open narrative style with little 'prompting' by prosecutors or magistrates (Danet, 1980).

7.4.3. Language performance level

The South African political structure has been criticized as undemocratic. It is said to promote the distribution of political, economic and social power according to ethnic membership per se. This criticism has increased significantly over the past decade. It has been the dynamo of many liberal changes. Hence, should ethnic disadvantaging occur in the legal system it may be of a less visible and more subtle kind than overt, 'racial prejudice' (Peterson and Friday, 1975). The subtle form of disadvantaging proposed in this study is that produced by perceived differences in language performance. The efficacy of performance was measured by the comprehensibility of testimony. The legal ideal that the *content* dominates the *form* of testimony, is challenged (Roch, 1977). 'Coloured' witnesses are expected to deliver testimonies that are perceived to be less comprehensible to 'white' receivers, than the testimonies of 'white' witnesses. There are two complementary explanations for this hypothesis:

First explanation

... trials often bring in contact defendants and jurors who live in substantially different worlds. This not only will affect the degree to which defendants and jurors share a common language, norms and inferences about the world, but also may affect the ways in which they structure and evaluate stories about social actions. Differences in norms and understandings among different social groups can make it difficult to understand the meaning of actions, and can cause juries to draw incorrect inferences. When this happens, judges and jurors will reject correct interpretations because of a few deviant story elements that will be seen as irrelevant or, worse yet, as evidence of fabrication.

(Loftus and Greene, 1983: 324)

Ethnic groups do not differ in their *ability* to perceive and recall events *accurately*. Instead, they perceive, remember and interpret events *differently* (Allport and Postman, 1965; Secord *et al*, 1956). People use schema to organize their general knowledge. The schema are used to produce and interpret the meaning of language. People from different ethnic groups have different social experiences and hence different general knowledge. In addition, any one ethnic group shares a consensus regarding the 'best way' to communicate. The norms of production and interpretation differ across groups (Mandler and Johnson, 1977). Therefore, the meaning intended by the sender of a message from one ethnic group, is expected to differ from the meaning interpreted by a receiver from another ethnic group (Newcomb, 1953; Thayer, 1967; Triandis, 1960).

Some communication always takes place when two persons interact, but the effectiveness of their communication is greater when they share common norms.

(Triandis, 1960 : 181)

It is proposed that 'white' receivers possess a different general knowledge of social events and different norms of interpretation from those of 'coloured' witnesses. 'White' receivers are expected to perceive *more*

norm violations in understanding 'coloureds' testimonies, than 'white' testimonies. Thus, 'coloureds' testimonies may be perceived as *less* well-formed and *less* comprehensible than 'whites' testimonies. Norm violations cause reparative inferencing from general knowledge. This may cause 'white' receivers to interpret a different meaning from that *intended* by 'coloured' witnesses. Receivers do *not believe* poorly structured testimony. Therefore, 'white' receivers are *less likely* to believe 'coloured' testimonies. 'Coloured' witnesses are disadvantaged in this way, particularly in interracial cases. When a 'coloured' accused's testimony is disbelieved by a 'white' magistrate and a 'white' complainant's testimony is believed, a conviction results. Alternatively, when a 'coloured' complainant's testimony is disbelieved and a 'white' accused's testimony is believed, the complainant 'looses' the case. This is a *highly covert* process of disadvantaging.

It must be emphasized that it is *socio-culturally learned* differences in cognitive processing that cause ethnic differences in language performance. No one ethnic group is *less* competent linguistically than another at applying *universally* accepted norms of production and interpretation. Communication has been improved between two ethnic groups by training *either* group in the communication norms of the other group (Thayer, 1967).

Second explanation

This account derives from attribution theory. People are hypothesis testers (Dewey, 1933; Kelly, 1955; Mead, 1938). They formulate hypotheses about their social world and then gather information to test them. However, information is not collected in a random fashion. People procure data that *confirms* their hypotheses. This preferential gathering strategy results in people *creating the accuracy of their own*

predictions (Snyder and Gangestad, 1981). This reality constructing consequence of hypothesis testing, is most operative in situations where the hypothesis tester's behaviour may provoke responses in the subject of the hypotheses. Hypothesis testers may then behave in ways that *cause* people to confirm their hypotheses.

Prosecutors and magistrates belong to the 'white', higher socio-economic class in South Africa. They are the hypothesis testers in the courtroom. They may possess negative attitudes toward witnesses from the 'coloured', lower socio-economic group. It is the prosecutor's function to prove the guilt of the accused. To do this he/she utilizes questioning during cross examination. Thus, the most likely hypothesis formulated by a prosecutor is that an accused is guilty and that the defence testimonies are an attempt to deceive the court. Should a prosecutor hold ethnically prejudiced attitudes toward defence witnesses, this hypothesis would be strengthened. To confirm the hypothesis a prosecutor may utilize skillful questioning to *create* schematic violations in the testimonies of 'coloured' defence witnesses. This would decrease a magistrate's perceptions of their well-formedness, comprehensibility and credibility. In an undefended case the prosecutor and the untrained accused question the prosecution witnesses. The prosecutor's hypothesis would be that the prosecution witnesses are 'truthful'. Their testimonies would not 'suffer' the debilitating effects of the prosecutor's questioning. The testimonies of the prosecution witnesses would remain well-formed relative to the poorly structured defence testimonies. The prosecutor's hypothesis would become a self-fulfilling prophecy! The magistrate would not believe the poorly structured case for the defence, but would believe the relatively well-formed case for the prosecution. A 'white' prosecutor would not hold ethnically prejudiced

attitudes toward 'white' prosecution witnesses. Therefore, when there is a 'white' complainant and a 'coloured' accused the relative disadvantage of the accused is increased. The probability of a conviction rises. This proposal challenges the administration of justice in undefended cases, in accusatorial proceedings.

What is most regrettable is that many people - partly from exaggeration of a few facts, partly from a readiness to believe - strongly associate the two factors of colour and crime. In so doing, they not only make more difficult the plight of the Negro offender, they also begin to see colour as sufficient reason for suspecting crime. The effects of this mental association go far beyond a seize-and-search police policy.

(Wolfgang and Cohen, 1970: 3)

8. METHOD

8.1. Pilot phase

8.1.1. Rationale

This research is novel. It is necessarily exploratory in nature. A review of the field showed little work done in the South African context. A pilot study was deemed essential to assess the validity of applying overseas findings to the South African criminal justice system. This study enabled the isolation and definition of the specific criteria 'ordinary' receivers use when making credibility judgements. These were to be investigated further during the experimental phase.

The general aim was to 'analyse' testimonial discourse in a rigorous, empirical manner. Verbatim transcripts were chosen instead of the participant observation of proceedings, because transcripts facilitate more detailed and replicable analyses. Inter-rater reliability levels are expected to be higher (Tajfel and Fraser, 1978). Additionally, when

the concern is one of semantics, participant observers frequently fail to note important aspects of testimonies, because the relevance of these aspects only becomes apparent long after they have occurred (Atkinson and Drew, 1979). Since the aim of the study was to investigate the *structural aspects* of testimony that influence its comprehensibility, transcripts were applicable. Confounding variables such as para-linguistic features, body language factors and other observable, witness characteristics, were eliminated. To conclude, the use of data from a 'real' speech situation in an experimental context is advantageous. The data is 'natural'. It is not 'artificial' as is the case in most simulation type studies. In addition, it is manipulated rigorously in an experimental situation. This enables the control of many confounding variables. The study becomes both a natural experiment and a laboratory experiment (Tajfel and Fraser, 1978). There are two disadvantages: First, the data constraints may be greater, because information required to match subjects may not be available eg, in this study indicators of socio-economic status were not available. Second, the external validity of the findings is lower than that of results from natural experiments.

Four premises of interactionism shaped the topic, aims and procedures used (see p 17). Deriving from the interactionist approach is the ethnomethodological perspective. A major procedural counterpart of ethnomethodology is the *common users'* analysis (Garfinkel, 1967). This form of analysis was adopted in the pilot study. It stands in opposition to the pivotal sociological assumption that social scientific explanations of phenomena are by definition superior, 'more true' accounts, than are *common sense* accounts (Atkinson and Drew, 1979). The rejection of this claim implies that ordinary, practical methods of human reasoning need not *be replaced*

with social scientific interpretations. It follows that common users and receivers of ordinary language are the *primary* sources of information regarding linguistic interactions. In this research, language users from a non-legal context were chosen to provide information regarding the criteria used in judging the credibility of testimony. It is accepted that such persons do *not* assess credibility in exactly the same manner as magistrates do. However, an analysis of normative credibility criteria must necessarily precede any direct investigation of *magisterial* decision-making. This facilitates the clear separation of the legal criteria from the everyday, socio-cognitive factors that affect credibility judgements.

8.1.2. Procedure

Three, fully bilingual, 'white', middle-class university students participated in the pilot phase. Bilingualism was a prerequisite because the transcripts were either in English or Afrikaans. It was deemed preferable to use as little translation as possible to avoid distortions of the original semantic structure and thus the comprehensibility. Since none of the three had legal training of any kind or training in linguistic analysis, they were common users. The common users were of a similar socio-economic class and of the same ethnicity as the magistrates who had heard the cases. Since both groups shared social group characteristics, it was assumed that they would use similar normative criteria when judging credibility (Mandler and Johnson, 1977). (See Appendix X.)

Four complete court cases were chosen from the records section of the Cape Town Regional Magistrates' courts. The cases comprised 16 testimonies: four delivered by complainants, four by accused, four by prosecution witnesses, and four by defence witnesses. In two of the cases the magistrate had

judged the complainants' and prosecution witnesses' testimonies to be credible; and in the other two cases the judgement was incredible ie, the accused were convicted. In two of the cases the magistrate had judged the accuseds' and defence witnesses' testimonies to be credible **and** in the other two cases the judgement was incredible ie, the accused were acquitted (see Table 8-1. below). The two conviction and the two acquittal cases were chosen at random. The common users 'analysed' the cases in a random order ie, a conviction, an acquittal, another acquittal and then a conviction.

Table 8-1. Pilot Phase Sample

Magistrate's judgements	Court Role				Totals
	Complainant	Prosecution witness	Accused	Defence witness	
Credible	2	2	2	2	8
Incredible	2	2	2	2	8
Totals	4	4	4	4	16

8.1.3. Conclusions

After the four cases had been 'analysed', a meeting was held to discuss the findings and to draw out the conclusions of the pilot phase. Due to the small sample size no statistical tests were conducted. The conclusions were as follows:

- (i) The common users maintained that *one* factor affected their credibility judgements ie, the incidence of problems that they experienced in comprehending the testimonies. These comprehension problems occurred when they attempted to integrate the many 'pieces' of information presented, into an overall understanding of each of the testimonies. Rephrased, testimonies that were perceived to be more difficult to comprehend, due to a higher incidence of comprehension problems, were also evaluated as a relatively less credible ie, low comprehensibility lowered common users' credibility ratings. The common users reported these 'incomprehensibilities' to be cues of *deception*. Hence, the *central dependent variable* chosen for the experimental phase was the incidence of comprehension problems perceived by common users ie, a measure of comprehensibility.
- (ii) To illustrate incomprehensible sections of testimonies, the common users cited very *specific* sets of information elements as well as *relationships* among these elements. To develop an operational measure of comprehensibility for the experimental phase, each element of information in testimonies had to be a *standardized* unit. Thus, lists of *story elements* were constructed. These story elements were formed by dividing each sentence in original testimonies into standardized units (see Appendices XIa and b). Propositions were the units chosen, because they are units of both language and thought. A proposition consists of a subject phrase and a predicate phrase (Atkinson, Atkinson and Hilgard, 1983). For example consider the sentence: Susan likes motor

cycles. 'Susan' is the subject phrase and 'likes motor cycles' is the predicate phrase. Numbering was used to indicate the original order in which the elements had been presented in testimonies.

- (iii) The common users labelled each set of incomprehensible story elements, an encoding problem. They had provided a reason for finding each set of story elements incomprehensible. The common users grouped the reasons that were similar. Nine groups resulted. The common users identified the characteristics distinguishing each of the nine groups. The researcher used these characteristics to form definitions (see pp 162).

Ten types of encoding problems were derived:

1. Irrelevant information.
2. Delayed information.
3. Empirical contradictions.
4. Expectation conflicts.
5. Ambiguous wording.
6. Inadequate justifications.
7. Justifications missing.
8. Direct contradictions.
9. Other problems.
10. Non categorized problems.

Each encoding problem could consist of any number of incomprehensible story elements. A sophisticated weighting system would have to have been developed in order to use the number of encoding problems as an operational measure of comprehensibility. Therefore, the more standardized incomprehensible *story elements* were chosen for the

operationalized measurement of comprehensibility.

An analysis of the common users' reasons for experiencing incomprehensibility showed that encoding problems ie, sets of incomprehensible story elements, were 'caused' by structural 'defects' in sections of testimonies. The structural 'defects' were violations of the structural norms prescribed by macro-schema in memory ie, schematic violations. Therefore, the encoding problems were indicators of the *ill-formedness* of testimonies. Each of the first eight types of problems was a different kind of schematic violation (see pp 162). The last two types were residual categories. Research has shown that the higher the level of a schematic violation the greater is the incomprehensibility it produces (Black, 1978) - (see pp 89). The first four types ie, irrelevant information, delayed information, empirical contradictions and expectation conflicts; were classified as violations of the highest two levels of the macro-schema proposed by Schank and Abelson (1977). The second four types ie, ambiguous wording, inadequate justifications, justifications missing and direct contradictions; were classified as violations of the lowest two levels of the macro-schema. Therefore, it was proposed that incomprehensible testimonies would contain higher proportions of the former high level encoding problems; and comprehensible testimonies would contain lower proportions. The corollary is that comprehensible testimonies would contain higher proportions of the latter low level encoding problems than incomprehensible testimonies. An operationalized measure of the proportions of each of these two levels of problems in testimonies had to be developed. Frequencies

could not be used because each problem could consist of a different number of story elements (as was mentioned above). Therefore, the operationalized measure chosen was the relative percentage of each type of encoding problem *in each testimony*, that were classified in each category (see pp 116 D.V.'s_{3a} to _{3j}).

- (iv) The common users reported assessing the credibility of *each* of the testimonies constituting the case for the prosecution and the case for the defence, *separately*. Only subsequently did they combine these individual assessments to form an overall conclusion as to the credibility of the *entire* case for the prosecution relative to the *entire* case for the defence. It was agreed that complainants' and accuseds' testimonies were of *central concern* to the common users in making their final decisions of the credibility of the *entire* prosecution-case, as compared to the *entire* defence-case. Other testimonies delivered by witnesses for the prosecution and for the defence did not play as central a role in determining perceived credibility. Finally, there appeared to be two sections constituting each testimony. These were the section of testimonies presented during cross examination and the section presented prior to, and in some cases following, cross examination.

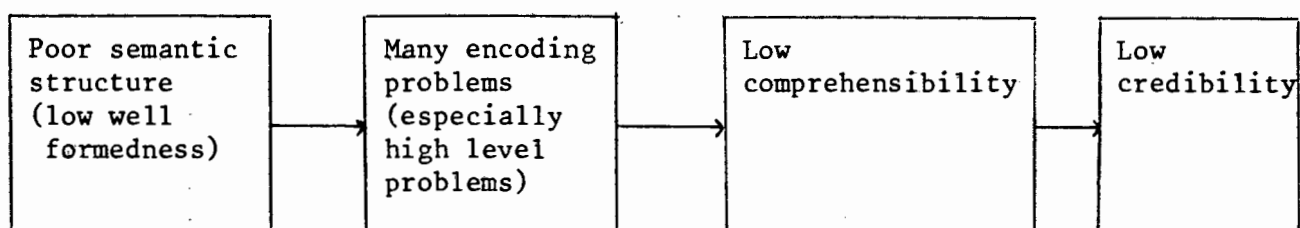
Hereafter, these two sections are referred to as the cross examination section (CES) and the participant initiated section (PIS). The common users agreed that the CES's and PIS's of testimonies differed in their comprehensibility. It was decided that dependent variable measures would be collected for each of the parts constituting an entire court case:

- The case for the prosecution and the case for the defence.

- Complainants' and accuseds' testimonies.
- The CES's and the PIS's of individual testimonies.

Figure 8-2. summarizes the 'causal' relationships proposed by the common users in the pilot phase.

Figure 8-2. 'Causal' Relationships



This causal relationship between structural well-formedness and comprehensibility is empirically well established (Thorndyke, 1977).

Hereafter, readers should understand that although structural well-formedness and comprehensibility are conceptually distinguishable variables, in this study they are pragmatically *interchangeable*.

8.2. Experimental phase

8.2.1. Aims

Comprehensibility and credibility

The first aim was to investigate whether the comprehensibility and therefore the well-formedness of testimony is associated with its perceived credibility. The term comprehensibility refers to the 'white' common users perceptions of the comprehensibility of testimonies. It does not imply that there is a single set of universally accepted criteria for evaluating the comprehensibility of discourse. Every social group possesses different criteria. An additional aim was to examine the relative proportions of each

type of encoding problem in credible as compared to incredible testimonies. The goal here was to develop a hierarchy reflecting the relative contributions of each type of encoding problem to credibility.

Comprehensibility and ethnicity

The second aim was to assess whether 'coloured' and 'white' witnesses present testimonies that differ systematically in their comprehensibility and therefore their well-formedness. An additional aim was to consider whether social group differences in the comprehensibility (well-formedness) of testimonies operate to the systematic disadvantage of 'coloured' witnesses. Lastly there was the aim of examining the differential proportions of the first eight types of encoding problems in the testimonies of 'coloured' as compared to 'white' witnesses. The goal here was to identify the types of encoding problems that distinguish 'coloured' from 'white' testimonies.

Comprehensibility and court role

The third aim was to ascertain whether there are differences in the comprehensibility and therefore the well-formedness of testimonies presented by complainants and accused, and to consider whether such differences operate to the systematic disadvantage of undefended accused. Lastly, there was the aim of examining the differential proportion of the eight types of encoding problems in the testimonies of complainants as compared to accused. The goal here was to identify the types of encoding problems that distinguish accuseds' testimonies from those of complainants.

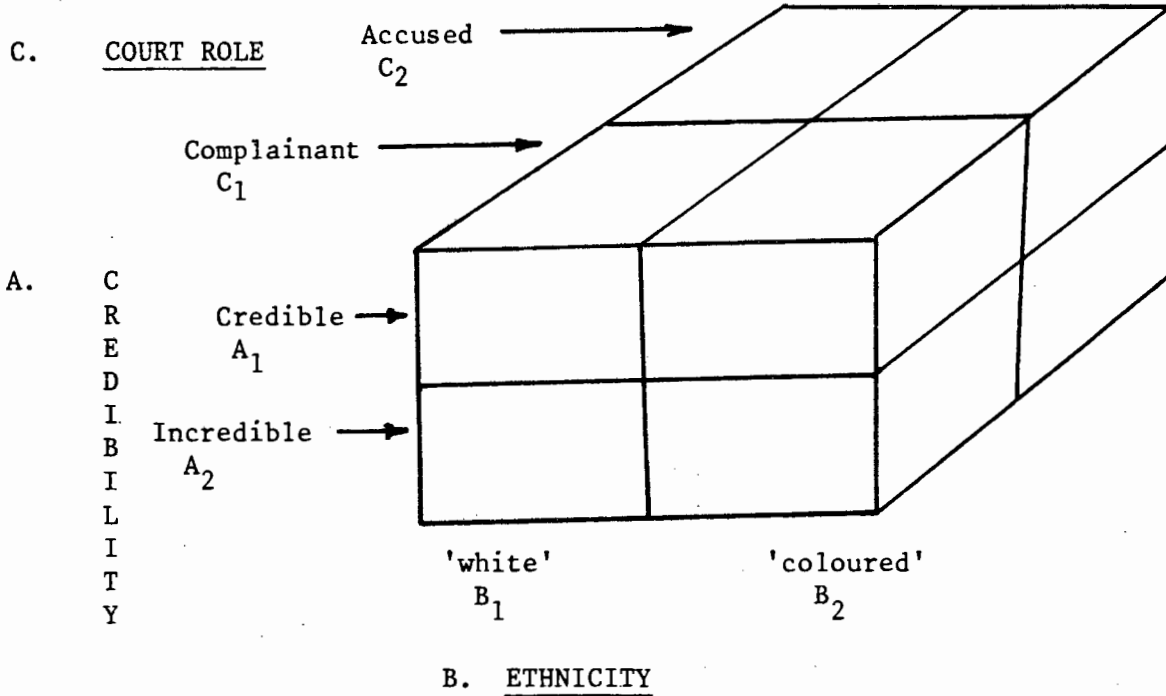
8.2.2. Design

First design

A 2x2x2 factorial design was used to facilitate the between-group comparisons of the D.V. measures $D.V._1$ to $3h$. (See pp 115.) The three

I.V.'s were: Credibility (I.V._A), Ethnicity (I.V._B) and Court Role (I.V._C)

Figure 8-3. Experimental Phase: Design One



The Credibility factor refers to *magistrates'* perceptions of the credibility of complainants' and accuseds' testimonies. In their judgements magistrates stated whether they found the complainants' testimony to be credible or incredible relative to the accuseds' testimony. When magistrates' found the complainants' testimony more credible than the accuseds' testimony, they judged the complainants' testimony to be credible and the accuseds' testimony to be incredible. Consequently, the verdict was one of guilty for the accused. When magistrates found the accuseds' testimony to be more credible than the complainants', they judged the accuseds' testimony to be credible and the complainants' to be incredible. The verdict was then one of not guilty for the accused. Therefore, Credible Complainants (A₁C₁) are those who had 'won' their cases; Credible Accused (A₁C₂) are those who had been acquitted; Incredible Complainants (A₂C₁) are those who had 'lost' their cases; and Incredible Accused (A₂C₂) are those who had been convicted. The

terms credible and incredible were chosen instead of guilty and not guilty, because it is confusing for readers to conceptualize guilty complainants.

Design two

A single factor design was used to compare the D.V.₁ measures (see pp 115) ie, comprehensibility of sides of cases. The two groups compared were the Credible and Incredible groups ie, I.V._{A1} and I.V._{A2}. The Credible group (I.V._{A1}), comprised cases in which magistrates had perceived the entire defence or prosecution case to be credible. The Incredible group (I.V._{A2}), comprised cases in which magistrates had perceived the entire defence or prosecution case to be incredible. Magistrates stated their perceptions of credibility in their judgements. When magistrates judged the prosecution case to be more credible than the defence case, the verdict was one of guilty and the accused was convicted. When magistrates judged the defence case to be more credible than the prosecution case, the verdict was one of not guilty and the accused was acquitted.

The Ethnicity factor (I.V._B) was not included in the design because cases were not matched on the ethnicity of the prosecution and defence witnesses involved. Reliable information regarding the ethnicity of defence and prosecution witnesses is not available in *all* cases. The Court Role factor (I.V._C) was not included because cases were not matched on the number of prosecution and defence witnesses involved.

8.2.3. Dependent variables

Comprehensibility was the central dependent variable. Four measures of comprehensibility were used, one for each of the sections comprising court cases ie, D.V.₁ - the entire side of cases (defence or prosecution); D.V._{2a} - individual testimonies; D.V._{2b} - cross examination sections, and D.V._{2c}

- participant initiated sections of testimonies. (See below.)

Variable labels	Description of the variables	Operationalized forms of each variable
D.V. 1	The extent to which the testimonies comprising an entire side of a court case were incomprehensible.	<p>The number of story elements in an entire side of a court case that were perceived to be incomprehensible.</p> $\frac{\text{Number of story elements perceived to be incomprehensible}}{\text{Total number of story elements}} \times \frac{100}{1}$ <p>The total number of story elements comprising an entire side of a court case.</p>
D.V. 2a	The extent to which each testimony was incomprehensible.	<p>The number of story elements in each testimony that were perceived to be incomprehensible.</p> $\frac{\text{Number of story elements perceived to be incomprehensible}}{\text{Total number of story elements}} \times \frac{100}{1}$ <p>The total number of story elements comprising each testimony.</p>
D.V. 2b	The extent to which the cross examination section (CES) of each testimony was incomprehensible.	<p>The number of story elements in the CES's of each testimony that were perceived to be incomprehensible.</p> $\frac{\text{Number of story elements perceived to be incomprehensible}}{\text{Total number of story elements}} \times \frac{100}{1}$ <p>The total number of story elements comprising the CES's of each testimony.</p>

Variable labels	Description of the variables	Operationalized forms of the variables
D.V. 2c	The extent to which the participant initiated section (PIS) of each testimony was incomprehensible.	<p>The number of story elements in the PIS's of each testimony that were perceived as being incomprehensible.</p> $\frac{\text{Number of story elements perceived as incomprehensible}}{\text{Total number of story elements}} \times \frac{100}{1}$ <p>The total number of story elements comprising the PIS's of each testimony.</p>

A second set of dependent variables were used as indicators of the relative occurrence of each of the eight types of encoding problems in testimonies ie, D.V.'s $3a$ to $3h$. D.V. $3i$ was a measure of the relative occurrence of encoding problems that 'analysts' did not place in the other eight categories ie, other problems. When none of the three 'analysts' agreed on the classification of an encoding problem during the content analysis, it was counted as a non-categorized problem. D.V. $3j$ is the measure of the relative occurrence of these non-categorized problems (see pp 119).

Variable labels	Description of the variables	Operationalized forms of the variables
D.V. 3a	The percentage of the encoding problems in each testimony that were irrelevant information problems.	<p>The number of irrelevant information problems in each testimony.</p> $\frac{\text{Number of irrelevant information problems}}{\text{Total number of encoding problems}} \times \frac{100}{1}$ <p>The total number of encoding problems in each testimony.</p>

Variable labels	Description of the variables	Operationalized forms of the variables
D.V. 3b	The percentage of the encoding problems in each testimony that were delayed information problems.	<p>The number of delayed information problems in each testimony.</p> $\frac{\text{Number of delayed information problems}}{\text{Total number of encoding problems}} \times \frac{100}{1}$ <p>The total number of encoding problems in each testimony.</p>
D.V. 3c	The percentage of the encoding problems in each testimony that were empirical contradiction problems.	<p>The number of empirical contradiction problems in each testimony.</p> $\frac{\text{Number of empirical contradiction problems}}{\text{Total number of encoding problems}} \times \frac{100}{1}$ <p>The total number of encoding problems in each testimony.</p>
D.V. 3d	The percentage of the encoding problems in each testimony that were expectation conflict problems.	<p>The number of expectation conflict problems in each testimony.</p> $\frac{\text{Number of expectation conflict problems}}{\text{Total number of encoding problems}} \times \frac{100}{1}$ <p>The total number of encoding problems in each testimony.</p>
D.V. 3e	The percentage of the encoding problems in each testimony that were ambiguous wording problems.	<p>The number of ambiguous wording problems in each testimony.</p> $\frac{\text{Number of ambiguous wording problems}}{\text{Total number of encoding problems}} \times \frac{100}{1}$ <p>The total number of encoding problems in each testimony.</p>

Variable labels	Description of the variables	Operationalized forms of the variables
D.V. 3f	The percentage of the encoding problems in each testimony that were inadequate justification problems.	<p>The number of inadequate justification problems in each testimony.</p> $\frac{\text{Number of inadequate justification problems}}{\text{Total number of encoding problems}} \times \frac{100}{1}$ <p>The total number of encoding problems in each testimony.</p>
D.V. 3g	The percentage of the encoding problems in each testimony that were justification missing problems.	<p>The number of justification missing problems in each testimony.</p> $\frac{\text{Number of justification missing problems}}{\text{Total number of encoding problems}} \times \frac{100}{1}$ <p>The total number of encoding problems in each testimony.</p>
D.V. 3h	The percentage of the encoding problems in each testimony that were direct contradiction problems.	<p>The number of direct contradiction problems in each testimony.</p> $\frac{\text{Number of direct contradiction problems}}{\text{Total number of encoding problems}} \times \frac{100}{1}$ <p>The total number of encoding problems in each testimony.</p>
D.V. 3i	The percentage of the encoding problems in each testimony that were classified as 'other problems'.	<p>The number of 'other problems' in each testimony.</p> $\frac{\text{Number of 'other problems'}}{\text{Total number of encoding problems}} \times \frac{100}{1}$ <p>The total number of encoding problems in each testimony.</p>

Variable labels	Description of the variables	Operationalized forms of the variables
D.V. 3j	The percentage of the encoding problems in each testimony that were not assigned to an encoding problem category ie, non-categorized problems.	The number of 'non-categorized' problems in each testimony. $\frac{\text{number of non-categorized problems}}{\text{total number of encoding problems}} \times \frac{100}{1}$ The total number of encoding problems in each testimony.

8.2.4. Hypotheses

Aim one: Hypotheses (comprehensibility and credibility)

1. The side of court cases that are judged by *magistrates* to be credible will be perceived by *common users* as being more comprehensible (more well-formed), than the side of court cases that are judged by *magistrates* to be incredible.
2. Testimonies that are judged by *magistrates* to be credible will be perceived by *common users* as being more comprehensible (more well-formed), than testimonies that are judged by *magistrates* to be incredible.
3. The *common users* will perceive the comprehensibility (well-formedness) of the cross examination sections of testimonies judged to be incredible by *magistrates*, as differing from the comprehensibility (well-formedness) of the CES's of testimonies judged to be credible by *magistrates*.
4. The *common users* will perceive the comprehensibility (well-formedness) of the participant initiated sections of testimonies judged to be

incredible *by magistrates*, as differing from the comprehensibility (well-formedness) of the PIS's of testimonies judged to be credible *by magistrates*.

5. *Common users* will perceive higher proportions of the high level encoding problems ie, irrelevant information, delayed information, empirical contradictions and expectation conflicts; in testimonies that are judged to be incredible *by magistrates*, than in testimonies judged to be credible *by magistrates*. This implies that those testimonies judged by magistrates to be incredible are more incomprehensible to common users than those judged to be credible. Therefore, this hypothesis is dependent upon the finding regarding hypothesis two.
6. *Common users* will perceive higher proportions of the low level encoding problems ie, ambiguous wording, inadequate justifications, justifications missing and direct contradictions, in testimonies that are judged to be credible *by magistrates*, than in testimonies judged to be incredible *by magistrates*. This hypothesis is dependent upon the finding regarding hypothesis two.

Aim two: Hypotheses (comprehensibility and ethnicity)

1. Testimonies delivered by 'coloured' witnesses will be perceived by '*white*' common users as being less comprehensible (less well-formed), than testimonies delivered by 'white' witnesses.
2. '*White*' common users will perceive the cross examination sections of testimonies delivered by 'coloured' witnesses to be less comprehensible (less well-formed), than the CES's of testimonies delivered by 'white' witnesses.
3. '*White*' common users will perceive the participant initiated sections of testimonies delivered by 'coloured' witnesses to be less comprehensible

(less well-formed), than the PIS's of testimonies delivered by 'white' witnesses,

4. 'White' common users will perceive higher proportions of the high level encoding problems ie, irrelevant information, delayed information, empirical contradictions and expectation conflicts; in testimonies delivered by 'coloured' witnesses than those delivered by 'white' witnesses. This implies that 'coloured' testimonies are less comprehensible and is thus dependent upon the finding regarding hypothesis one above.
5. 'White' common users will perceive higher proportions of low level encoding problems ie, ambiguous wording, inadequate justifications, justifications missing and direct contradictions, in testimonies delivered by 'white' witnesses than in those delivered by 'coloured' witnesses. This hypothesis is dependent upon the finding regarding hypothesis one above.
6. This hypothesis will *not* be tested directly. However, should hypothesis two from aim one (see previous page), and hypothesis one from aim two (above) be accepted following statistical analysis; the following *deduction* may be made: *Magistrates* perceive 'coloured' witnesses' testimonies to be less comprehensible (less well-formed) and therefore, less credible than 'white' witnesses testimonies. Thus, 'coloured' witnesses are disadvantaged *relative* to 'white' witnesses in court.

Aim three: Hypotheses (comprehensibility and court role)

1. *Common users* will perceive complainants' testimonies to be more comprehensible (more well-formed), than accuseds' testimonies.
2. *Common users* will perceive the cross examination sections of complainants'

testimonies to be more comprehensible (more well-formed), than the CES's of accuseds' testimonies.

3. *Common users* will perceive the participant initiated sections of complainants' testimonies to be more comprehensible (more well-formed), than the PIS's of accuseds' testimonies.
4. *Common users* will perceive higher proportions of the high level encoding problems ie, irrelevant information, delayed information, empirical contradictions and expectation conflicts; in accuseds' testimonies than in complainants' testimonies. This implies that accuseds' testimonies are less comprehensible than complainants' and is thus dependent on the finding regarding hypothesis one above.
5. *Common users* will perceive higher proportions of low level encoding problems ie, ambiguous wording, inadequate justifications, justifications missing and direct contradictions, in complainants' testimonies than in accuseds' testimonies. This hypothesis is dependent upon the finding regarding hypothesis one above.
6. This hypothesis will *not* be tested directly. However, should hypothesis two from aim one (see previous page), and hypothesis one from aim three (above) be accepted following statistical analysis; the following deduction may be made: *Magistrates* perceive accuseds' testimonies to be less comprehensible (less well-formed) and therefore less credible than complainants' testimonies. Thus, accused are disadvantaged *relative* to complainants in unrepresented court cases.

8.2.5. Sample

The use of a formal stratified and/or completely randomized sampling strategy was deemed impractical. Statistics of the number of magistrates' court

acquittals and convictions for each of the official ethnic groups are not available (South Africa, 1984). The first thirty-two court cases that met the selection criteria were included in the experimental sample. No significant, systematic bias was expected to result from this data selection technique (cases are stored in the records section of the Cape Town Regional magistrates' courts according to their chronological order and trial outcomes.) The selection criteria facilitated the planned within and between-group comparisons necessary to test the hypotheses:

1. Only cases in which accused were *unrepresented* were included in the sample, firstly because the majority of accused in magistrates' court cases are unrepresented. This is especially true of 'black', 'indian' and 'coloured' accused. Secondly, this criterion facilitated tests of the hypotheses under aim three (see pp 121).
2. Only those case transcripts considered by the transcribers to be accurate transcriptions of the actual recorded cases were used. The transcribers provided a certificate of the accuracy of each transcription.
3. Only cases in which a plea of not guilty was entered by the accused were included. This was necessary as testimony is seldom delivered when a plea of guilty is entered. Second, when accused plead not guilty their motivations to attain credibility are more similar to complainants' motivations, than when accused admit guilt from the outset.
4. Only cases in which *both* complainants and accused delivered testimony were chosen.
5. The first 16 cases that met the selection criteria and had verdicts of guilty were selected ie, convictions. This meant 16 credible complainants and 16 incredible accused. (See Figure 8-4., cells

$A_1B_1C_1/A_1B_1C_2$ and $A_2B_1C_2/A_2B_2C_2$ respectively.) The first 16 cases that met the selection criteria and had verdicts of not guilty were selected ie, acquittals. This meant 16 credible accused and 16 incredible complainants. (See figure 8-4., cells $A_1B_1C_2/A_1B_2C_2$ and $A_2B_1C_1/A_2B_2C_1$ respectively.)

6. Equal numbers of 'coloured' and 'white' complainants and accused were selected.

Figure 8-4. Experimental Sample

A_1B_1 Sixteen testimonies delivered by 'white' witnesses and judged by magistrates to be credible.		A_1B_2 Sixteen testimonies delivered by 'coloured' witnesses and judged by magistrates to be credible.	
$A_1B_1C_1$ Eight testimonies delivered by complainants.	$A_1B_1C_2$ Eight testimonies delivered by accused.	$A_1B_2C_1$ Eight testimonies delivered by complainants.	$A_1B_2C_2$ Eight testimonies delivered by accused.

A_2B_1 Sixteen testimonies delivered by 'white' witnesses and judged by magistrates to be incredible.		A_2B_2 Sixteen testimonies delivered by 'coloured' witnesses and judged by magistrates to be incredible.	
$A_2B_1C_1$ Eight testimonies delivered by complainants.	$A_2B_1C_2$ Eight testimonies delivered by accused.	$A_2B_2C_1$ Eight testimonies delivered by complainants.	$A_2B_2C_2$ Eight testimonies delivered by accused.

Figure 8-5. Total Sample : Number of Testimonies

	Complainant	Accused	Total	Prosecution witnesses	Defence witnesses	Total	Row Totals
Pilot phase	4	4	8	4	4	8	16
Experimental phase	32	32	64	20	5	25	89
Column Totals	36	36	72	24	9	33	105

In all, 89 testimonies were analysed in the experimental phase. Twenty-five were delivered by witnesses for the prosecution and defence. These were only included in the calculation of $D.V._1$. The cases were not matched on the number and race of the witnesses for the prosecution and defence.

This would have reduced the generalizability of the findings. The witnesses were not matched on their age and sex because these variables have negligible effects on the verdict (Hagan, 1974). The experimental sample included a range of the magistrates who hear cases and the prosecutors who participate in cases, as well as a range of the kinds of offences brought before the Cape Town magistrates' courts. The possible confounding effects of these three variables were controlled by including a representative range in the sample (see Appendices XIIa to XIIId). Robbery cases are overrepresented in the 'coloured' sample. The effects of this type of offence on comprehensibility are not known. The data selection technique made this overrepresentation unavoidable. Interracial cases comprised 18.75% of the sample ie, six cases and 12 testimonies (see Appendix XIIe). This factor was not expected to bias the findings systematically.

8.2.6. Procedure

Phase one

Three different, fully bilingual 'white', middle class, university students were selected as common users. They were requested to read each testimony constituting each court case carefully and to note down the story elements that they perceived as being difficult to comprehend ie, incomprehensible. They were asked to provide detailed reasoning as to why they found these elements incomprehensible (see Appendix XIII). Two of the common users had *not* participated in the pilot phase of the study. The third was the researcher herself. New common users were chosen to avoid any carryover effects arising from a knowledge of the I.V.'s discussed in the pilot phase. They had received no legal training or training in linguistic analysis. The new common users were not informed of the hypotheses to be tested or the aims of the study. None of the three were aware of the race of the court

participants nor of the magistrates' credibility judgements for each case. Each case was distinguished by a code and the cases were 'analysed' in a random order. The only modification made to the original transcripts was the alteration of all information that could have led to the identification of the people involved. Such information was replaced with information of a similar nature. The testimonies were presented in both English and Afrikaans. To prevent confounding from this source, bilingual common users were employed. However, the testimonies of 'coloured' witnesses were delivered in a particular dialect of Afrikaans ie, 'gamtal'. The common users were familiar with the dialect. In addition, they were given story element lists translated into English. The translation was conducted by the researcher and a person well-versed in this dialect. The common users reported no difficulties in understanding due to dialect. The common users were debriefed following the completed procedure.

Rather than striving for complete agreement among the three common users, allowance was made for the operation of chance factors such as fatigue and carelessness. Each set of story elements that was perceived to be incomprehensible for the same reason by at least two out of the three common users was included in the D.V. measures ie, D.V.'s 1 and 2a to 2c. They noted 620 sets of problematic story elements. In only 121 of these problems was there less than full agreement among the three 'analysts'. Therefore, all three analysts agreed on 80.5% of the sets of incomprehensible story elements.

Phase two

The method used was content analysis:

Content analysis is a research technique for the objective, systematic, and quantitative description of the manifest content of communication.

(Berelson, 1971: 18).

Three different 'analysts' were required to read through each of the reasons that had been provided by the Phase I-common users as to why they had found story elements incomprehensible. Then they were asked to place each of these reasons into one of nine possible encoding problem categories. These categories had been derived from the pilot phase data. Once again to avoid carry-over effects three new, white middle class, university students were selected. They were not informed of the variables, the aims or hypotheses of the research.

Initially the Phase II 'analysts' were provided with a pilot sample of the reasoning from twenty-two testimonies. This is 25% of the sample which is considered to be representative (Cozby, 1981). An initial test sample was used to test the definitions for each of the encoding problem categories as these were required to be mutually exclusive. Each reason had to fit *only one* category and had to meet *all* the criteria defining that category. All of the reasons had to be placed in the nine categories to avoid bias. The definition of each category had to be clear and differentiable from those defining other categories (Berelson, 1971). These guidelines were followed. A meeting of the three 'analysts' was held at the completion of this test sample, where problems were discussed and clarified. The 'analysts' were then provided with the remainder of the sample for analysis. The analyses were conducted in random order. They were also instructed to reassess the reasons from the test sample-testimonies in the light of the subsequent clarifications that had been made (see Appendix XIV). The 'analysts' were debriefed following the completed procedure.

Only those reasons placed in the same category by at least two of the three 'analysts' were included in the D.V. measures ie, D.V.'s s_{3a} to $3i$. (See pp 116.)

The 'analysts' categorized 620 reasons. There was less than total agreement among the three in the classification of 177 reasons. Agreement was reached in the categorization of 71.5% of the reasons. There was *no* agreement among the three in classifying 3.5% or 22 of the 620 reasons. This latter measure constituted D.V._{3j}. (See pp 119.)

8.2.7 Analyses

I.V._A (credibility) and D.V.₁ (comprehensibility of sides of cases) were analysed using a t-test. I.V._A (credibility), I.V._B (ethnicity), I.V._C (court role) and the other eleven D.V.'s were analysed using simple three-way Anovas (see pp 116). D.V._{3i} (other problems) was not statistically analysed because there were no measures for this D.V. D.V._{3j} (non-categorized problems) was not statistically analysed because there were too few measures for this D.V. ie, 22. The data were checked for correspondence with the three assumptions of the Anova test. The first assumption is that the treatment populations from which the sample is drawn are normally distributed. The scores in each of the three conditions were assumed to ~~take~~ take the shape of the normal distribution curve. The second assumption is that the variances of the treatment populations be equivalent. The probability of making a type I error increases when data is extremely heterogenous (Rogan and Kesselman, 1977). The method used to test the data was to compare the ratio of the largest within-group variance to that of the smallest, for the significant findings (Keppel, 1982). The data did not reflect great heterogeneity of variance. It was ascertained that the third assumption of the independence of error components had not been violated.

9. RESULTS

9.1. Comprehensibility

9.1.1. Side of case

In the tables of means and standard deviations for D.V.'s $_1$ to $_{2c}$, higher mean values indicate higher 'ratings' of incomprehensibility (lower levels of well-formedness), by common users. Lower mean values indicate higher 'ratings' of comprehensibility (higher levels of well-formedness), by common users. (The raw data are presented in Appendix XV.)

Table 9-1. D.V. $_1$ (Sides of cases) : T-test Results

	Credible (A_1)	Incredible (A_2)	T-test
Mean	14.278	27.219	-11.29 ****
S.D.	(11.183)	(15.005)	df = 63

**** $p \leq 0.0001$ (2 tailed)

There was a significant difference ($t = -11.29$; $p \leq 0.0001$) between the levels of incomprehensibility in credible sides of cases as compared with incredible sides of cases. It is evident from Table 9-1. that incredible sides of cases were more incomprehensible.

9.1.2. Testimonies

Table 9-2. D.V._{2a} (Testimonies) : Means and Standard Deviations

	B ₁ 'White'			B ₂ 'Coloured'			Combined Row Total
	C ₁ Complainant	C ₂ Accused	Row Total	C ₁ Complainant	C ₂ Accused	Row Total	
A ₁ Credible	10.525 (11.495) 8	12.050 (10.921) 8	11.288 (11.208) 16	18.138 (13.144) 8	16.938 (8.158) 8	17.538 (10.651) 16	14.413 (11.017) 32
A ₂ Incredible	23.050 (13.623) 8	18.100 (11.870) 8	20.575 (12.747) 16	36.275 (11.643) 8	33.350 (17.672) 8	34.813 (14.658) 16	27.694 (15.213) 32
Column Totals	16.788 (12.559) 16	15.075 (11.396) 16	15.931 (12.499) 32	27.207 (12.394) 16	25.144 (12.915) 16	26.175 (15.280) 32	21.053 (14.778) 64

Table 9-3. D.V. 2a : Anova Summary Table

Source	SS	DF	MS	F
A (Credibility)	2776.551	1	2776.551	17.681
B (Ethnicity)	1726.274	1	1726.274	10.993
C (Court Role)	48.832	1	48.832	0.311
AB	268.523	1	268.523	1.710
AC	50.924	1	50.924	0.324
BC	2.549	1	2.549	0.016
ABC	53.498	1	53.498	0.341
Error	8794.247	56	157.040	

**** $p \leq 0.0001$ ** $p < 0.01$

The analysis of the main effects indicated two significant differences: First, a difference between the levels of incomprehensibility in credible testimonies as compared to incredible testimonies ($F= 17.681$; $p= 0.0001$). From Table 9-2. it is evident that incredible testimonies were more incomprehensible. Second, a difference between the levels of incomprehensibility in 'white' as compared to 'coloured' testimonies ($F= 10.993$; $p= 0.002$). It is evident from Table 9-2. that 'coloured' testimonies were more incomprehensible.

9.1.3. Cross Examination Sections

Table 9-4. D.V._{2b} (CES's) : Means and Standard Deviations

	B ₁ 'White'			B ₂ 'Coloured'			Combined Row Totals
	C ₁ Complainant	C ₂ Accused	Row Totals	C ₁ Complainant	C ₂ Accused	Row Totals	
A ₁ Credible	12.588 (23.340) 8	11.425 (14.618) 8	12.007 (18.979) 16	10.362 (14.295) 8	10.888 (9.224) 8	10.625 (11.76) 16	11.316 (15.405) 32
A ₂ Incredible	17.538 (34.351) 8	21.438 (21.621) 8	19.488 (27.986) 16	44.7 (31.059) 8	30.4 (21.591) 8	37.55 (26.325) 16	28.519 (28.419) 32
Column Totals	15.063 (28.846) 16	16.432 (18.12) 16	15.747 (23.661) 32	27.531 (22.677) 16	20.64 (15.408) 16	24.088 (24.535) 32	19.917 (24.276) 64

Table 9-5. D.V. 2b : Anova Summary Table

Source	SS	DF	MS	F
A (Credibility)	83520.195	1	83520.195	2.733
B (Ethnicity)	597.957	1	597.957	0.020
C (Court Role)	47000.820	1	47000.820	1.538
AB	543.480	1	543.480	0.018
AC	46428.082	1	46428.082	1.519
BC	2.462	1	2.462	0.000
ABC	26.085	1	26.085	0.001
Error	1711439.031	56	30561.411	

The factors do not have any significant effect on the incomprehensibility of the CES's.

9.1.4. Participant Initiated Sections

Table 9-6. D.V._{2c} (PIS's) : Means and Standard Deviations

	B ₁ 'White'			B ₂ 'Coloured'			Combined Row Totals
	C ₁ Complainant	C ₂ Accused	Row Totals	C ₁ Complainant	C ₂ Accused	Row Totals	
A ₁ Credible	9.388 (9.328) 8	15.388 (17.281) 8	12.389 (13.305) 16	20.612 (15.320) 8	20.613 (17.433) 8	20.613 (16.377) 16	16.5 (15.192) 32
A ₂ Incredible	24.513 (14.817) 8	18.563 (12.019) 8	21.538 (13.418) 16	37.225 (7.352) 8	42.338 (17.482) 8	39.782 (12.417) 16	30.659 (16.039) 32
Column Totals	16.951 (12.073) 16	16.976 (14.65) 16	16.963 (14.146) 32	28.919 (11.336) 16	31.476 (17.458) 16	30.197 (17.350) 32	23.580 (17.061) 64

Table 9-7. D.V._{2c} : Anova Summary Table

Source	SS	DF	MS	F
A (Credibility)	3495.508	1	3495.508	15.522 ****
B (Ethnicity)	2613.944	1	2613.944	11.607 ***
C (Court Role)	0.117	1	0.117	0.001
AB	315.631	1	315.631	1.402
AC	138.861	1	138.861	0.617
BC	17.631	1	17.631	0.078
ABC	61.360	1	61.360	0.272
Error	12611.113	56	225.198	

**** $p \leq 0.0001$ *** $p \leq 0.001$

The analysis of the main effects indicates two significant differences: First, a difference between the levels of incomprehensibility in credible PIS's as compared to incredible PIS's ($F = 15.522$; $p = 0.0001$). From Table 9-6. it is evident that incredible PIS's were more incomprehensible. Second, there was a difference between the levels of incomprehensibility in 'coloured' PIS's as compared to 'white' PIS's ($F = 11.607$; $p = 0.001$). It is evident from Table 9-6. that 'coloured' PIS's were more incomprehensible.

9.2. Encoding problems

In the tables of means and standard deviations for D.V.'s 3_a to 3_j , higher means indicates higher relative percentages of each type of encoding problem in testimonies.

9.2.1. Irrelevant information

Table 9-8. D.V._{3a} (Irrelevant Information) : Means and Standard Deviations

	B ₁ 'Whites'			B ₂ 'Coloureds'			Combined Row Totals
	C ₁ Complainant	C ₂ Accused	Row Totals	C ₁ Complainant	C ₂ Accused	Row Totals	
A ₁ Credible	1.138 (3.217) 8	8.025 (17.273) 8	4.582 (10.245) 16	00 (00) 8	7.813 (17.599) 8	3.907 (8.8) 16	4.245 (9.523) 32
A ₂ Incredible	1.25 (3.536) 8	4.163 (11.773) 8	2.707 (7.655) 16	3.113 (4.423) 8	1.537 (3.254) 8	2.325 (3.982) 16	2.479 (5.819) 32
Column Totals	1.194 (3.377) 16	6.094 (14.523) 16	3.645 (8.95) 32	1.557 (2.212) 16	4.675 (10.427) 16	3.116 (6.391) 32	3.38 (9.863) 64

Table 9-9. D.V. _{3a} : Anova Summary Table

Source	SS	DF	MS	F
A (Credibility)	47.783	1	47.783	0.478
B (Ethnicity)	4.463	1	4.463	0.045
C (Court Role)	257.201	1	257.201	2.573
AB	0.345	1	0.345	0.003
AC	178.556	1	178.556	1.786
BC	12.691	1	12.691	0.127
ABC	29.295	1	29.295	0.293
Error	5597.768	56	99.960	

The factors do not have any significant effect on the relative percentages of irrelevant information problems.

9.2.2 Delayed Information

Table 9-10. D.V. _{3b} (Delayed information) : Means and Standard Deviations

	B ₁ 'Whites'			B ₂ 'Coloureds'			Combined Row Totals
	C ₁ Complainant	C ₂ Accused	Row Totals	C ₁ Complainant	C ₂ Accused	Row Totals	
A ₁ Credible	2.5 (7.071) 8	0.688 (1.945) 8	1.594 (4.508) 16	3.125 (8.839) 8	0.00 (0.00) 8	1.563 (4.42) 16	1.578 (5.610) 32
A ₂ Incredible	2.5 (4.629) 8	0.00 (0.00) 8	1.3 (2.315) 16	6.725 (4.977) 8	4.562 (5.133) 8	5.644 (5.055) 16	3.447 (4.772) 32
Column Totals	2.4 (5.85) 16	0.343 (0.973) 16	1.442 (4.271) 32	4.925 (6.908) 16	2.281 (2.567) 16	3.603 (5.945) 32	2.513 (5.251) 64

Table 9-11. D.V. _{3b} : Anova Summary Table

Source	SS	DF	MS	F
A (Credibility)	55.876	1	55.876	2.186
B (Ethnicity)	76.126	1	76.126	2.979
C (Court Role)	92.160	1	92.160	3.606
AB	78.323	1	78.323	3.065
AC	0.076	1	0.076	0.003
BC	0.951	1	0.951	0.037
ABC	2.722	1	2.722	0.107
Error	1431.137	56	25.556	

The factors do not have any significant effect on the relative percentages of delayed information problems.

9.2.3. Empirical contradictions

Table 9-12. D.V. _{3c} (Empirical Contradictions) : Means and Standard Deviations

	B ₁ 'White'		B ₂ 'Coloured'	
	C ₁ Complainant	C ₂ Accused	C ₁ Complainant	C ₂ Accused
A ₁ Credible	0.000 (0.000) 8	8.825 (12.279) 8	6.725 (12.620) 8	1.250 (3.536) 8
A ₂ Incredible	4.588 (6.902) 8	11.788 (14.647) 8	10.913 (13.832) 8	7.175 (7.459) 8

Table 9-13. D.V. _{3c} : Anova Summary Table

Source	SS	DF	MS	F
A (Credibility)	311.964	1	311.964	0.089
B (Ethnicity)	0.744	1	0.744	0.933
C (Court Role)	46.410	1	46.410	0.446
AB	6.566	1	6.566	0.063
AC	0.013	1	0.013	0.991
BC	636.931	1	636.931	* 6.127
ABC	11.306	1	11.306	0.109
Error	5821.530	56	103.956	

* $p \leq 0.05$

The F ratio for the interaction between the ethnicity and court role factors is significant at the 5% level. There was no effect due to the credibility factor. The interaction was investigated with an analysis of simple main effects.

Table 9-14. Empirical Contradictions : Ethnicity/Court Role Means

	B ₁ 'White'	B ₂ 'Coloured'	Row Means
C ₁ Complainant	2.294 (5.277)	7.569 (10.011)	5.556 (10.290)
C ₂ Accused	10.306 (13.17)	4.213 (6.415)	7.259 (10.636)
Column Means	6.300 (10.661)	6.516 (10.335)	

Table 9-15. Empirical Contradictions : Analysis of Simple Main Effects

Source	SS	DF	MS	F
B at C ₁	5.89	1	5.89	0.057
B at C ₂	12.202	1	12.202	0.117
C at B ₁	11.453	1	11.453	0.110
C at B ₂	6.726	1	6.726	0.065
Error	5821.53	56	103.956	

The analysis of the simple main effects showed that the differences between the 'coloured' and 'white' conditions of the complainant group and of the accused group were not statistically significant.

9.2.4. Expectation conflicts

Table 9-16. D.V._{3d} (Expectation Conflicts): Means and Standard Deviations

	B ₁ 'Whites'			B ₂ 'Coloureds'			Combined Row Totals
	C ₁ Complainant	C ₂ Accused	Row Totals	C ₁ Complainant	C ₂ Accused	Row Totals	
A ₁ Credible	14.050 (18.945) 8	27.663 (31.174) 8	20.857 (25.058) 16	15.850 (10.566) 8	16.338 (22.020) 8	16.094 (16.293) 16	18.475 (21.563) 32
A ₂ Incredible	12.575 (13.547) 8	23.150 (19.718) 8	17.863 (16.633) 16	7.362 (8.293) 8	23.013 (16.696) 8	15.188 (12.495) 16	16.525 (15.987) 32
Column Totals	13.313 (16.246) 16	25.407 (25.446) 16	19.359 (21.688) 32	11.606 (9.43) 16	19.676 (19.358) 16	15.641 (15.653) 32	17.5 (18.855) 64

Table 9-17. Expectation Conflicts : Court Role Means

Expectation Conflicts	
C ₁ Complainant	12.459 (13.174) 32
C ₂ Accused	22.541 (22.283) 32

Table 9-18. D.V. _{3d} : Anova Summary Table

Source	SS	DF	MS	F
A (Credibility)	60.840	1	60.840	0.171
B (Ethnicity)	221.266	1	221.266	0.622
C (Court Role)	1626.105	1	1626.105	4.569
AB	17.431	1	17.431	0.049
AC	147.016	1	147.016	0.413
BC	64.802	1	64.802	0.182
ABC	331.240	1	331.240	0.931
Error	19929.657	56	355.887	

* $p \leq 0.05$.

The analysis of the main effects indicated a significant difference between the relative frequency of expectation conflict problems in complainants' as compared to accuseds' testimonies ($F= 4.569$; $p= 0.037$). From Table 9-17. it is evident that accuseds' testimonies contained higher percentages of expectation conflicts.

9.2.5. Ambiguous wording

Table 9-19. D.V. 3_e (Ambiguous Wording) : Means and Standard Deviations

	B ₁ 'White'			B ₂ 'Coloured'			Combined Row Totals
	C ₁ Complainant	C ₂ Accused	Row Totals	C ₁ Complainant	C ₂ Accused	Row Totals	
A ₁ Credible	28.6 (36.126)	13.138 (25.425)	20.869 (30.776)	10.987 (14.063)	15.337 (15.324)	13.162 (14.694)	17.016 (24.227)
	8	8	16	8	8	16	32
A ₂ Incredible	26.212 (17.857)	6.025 (8.336)	16.119 (13.097)	20.150 (10.527)	14.7 (10.640)	17.425 (13.584)	16.772 (15.235)
	8	8	16	8	8	16	32
Combined Column Totals	27.406 (26.992)	9.582 (16.881)	18.494 (24.852)	15.569 (12.295)	15.019 (15.982)	15.294 (14.007)	16.894 (20.076)
	16	16	32	16	16	32	64

Table 9-20. D.V. 3e : Anova Summary Table

Source	SS	DF	MS	F
A (Credibility)	0.951	1	0.951	0.002
B (Ethnicity)	163.840	1	163.840	0.415
C (Court Role)	1350.563	1	1350.563	3.419
AB	324.901	1	324.901	0.823
AC	210.975	1	210.975	0.534
BC	1193.703	1	1193.703	3.022
ABC	25.756	1	25.756	0.065
Error	22120.726	56	395.013	

These factors do not have any significant effect on the relative percentages of ambiguous wording problems.

9.2.6. Inadequate justifications

Table 9-21. D.V._{3f} (Inadequate Justifications): Means and Standard Deviations

	B ₁ 'White'			B ₂ 'Coloured'			Combined Row Totals
	C ₁ Complainant	C ₂ Accused	Row Totals	C ₁ Complainant	C ₂ Accused	Row Totals	
A ₁ Credible	6.763 (10.295) 8	3.863 (6.132) 8	5.313 (8.214) 16	9.675 (20.712) 8	17.625 (23.393) 8	13.65 (22.053) 16	9.481 (16.735) 32
A ₂ Incredible	4.513 (6.384) 8	14.675 (26.268) 8	9.594 (16.326) 16	4.512 (5.336) 8	14.125 (13.051) 8	9.319 (9.194) 16	9.456 (15.335) 32
Column Totals	5.638 (8.339) 16	9.269 (16.2) 16	7.453 (14.716) 32	7.094 (13.024) 16	15.875 (18.222) 16	11.484 (7.037) 32	9.469 (15.922) 64

Table 9-22. D.V. _{3f} : Anova Summary Table

Source	SS	DF	MS	F
A (Credibility)	0.010	1	0.010	0.000
B (Ethnicity)	260.016	1	260.016	1.015
C (Court Role)	616.281	1	616.281	2.406
AB	296.701	1	296.701	1.158
AC	216.826	1	216.826	0.846
BC	106.090	1	106.090	0.414
ABC	129.960	1	129.960	0.507
Error	14345.552	56	256.171	

The factors do not have any significant effect on the relative percentages of inadequate justification problems.

9.2.7. Justifications missing

Table 9-23. D.V._{3g} (Justifications Missing) : Means and Standard Deviations

	B ₁ 'Whites'			B ₂ 'Coloureds'			Combined Row Totals
	C ₁ Complainant	C ₂ Accused	Row Totals	C ₁ Complainant	C ₂ Accused	Row Totals	
A ₁ Credible	24.050 (35.985) 8	7.037 (9.891) 8	15.544 (22.938) 16	10.688 (17.185) 8	7.3 (9.149) 8	8.994 (13.167) 16	12.269 (21.213) 32
A ₂ Incredible	13.212 (12.763) 8	6.6 (9.846) 8	9.906 (11.305) 16	14.237 (10.894) 8	11.187 (7.641) 8	12.712 (9.268) 16	11.309 (10.37) 32
Column Totals	18.631 (24.374) 16	6.819 (9.869) 16	12.725 (20.6) 32	12.463 (14.04) 16	9.244 (8.395) 16	10.853 (11.481) 32	11.789 (16.57) 64

Table 9-24. D.V. $3g$: Anova Summary Table

Source	SS	DF	MS	F
A (Credibility)	14.726	1	14.726	0.053
B (Ethnicity)	56.063	1	56.063	0.203
C (Court Role)	903.754	1	903.754	3.273
AB	350.158	1	350.158	1.268
AC	115.294	1	115.294	0.418
BC	295.410	1	295.410	1.070
ABC	101.254	1	101.254	0.367
Error	15460.862	56	276.087	

The factors do not have any significant effect on the relative percentages of justification missing problems.

9.2.8. Direct contradiction

Table 9-25. D.V. $3h$ (Direct Contradictions): Means and Standard Deviations

	B ₁ 'Whites'		B ₂ 'Coloureds'	
	C ₁ Complainant	C ₂ Accused	C ₁ Complainant	C ₂ Accused
A ₁ Credible	7.9 (11.004) 8	17.225 (20.731) 8	42.938 (36.166) 8	33.225 (15.706) 8
A ₂ Incredible	21.763 (18.605) 8	29.750 (24.344) 8	24 (12.216) 8	21.313 (24.919) 8

Table 9-26. D.V. 3h : Anova Summary Table

Source	SS	DF	MS	F
A (Credibility)	19.914	1	19.914	1.436
B (Ethnicity)	2010.401	1	2010.401	* 4.215
C (Court Role)	24.133	1	24.133	0.051
AB	3276.130	1	3276.130	* 6.868
AC	32.348	1	32.348	0.068
BC	882.832	1	882.832	1.851
ABC	69.931	1	69.931	0.147
Error	26711.012	56	476.982	

* $p \leq 0.05$

The F ratio for the interaction between the credibility and ethnicity factors is significant at the 5% level. There is no effect due to the court role factor. The interaction was investigated with an analysis of simple main effects.

Table 9-27. Direct Contradictions : Credibility/Ethnicity Means

	B ₁ 'White'	B ₂ 'Coloured'	Row Means
A ₁ Credible	12.563 (16.76) 16	38.081 (22.399) 16	25.322 (25.830) 32
A ₂ Incredible	25.738 (21.323) 16	22.656 (19.009) 16	24.207 (19.938) 32
Column Means	19.159 (20.026) 32	30.369 (24.484) 32	24.764 (22.896) 64

Table 9-28. Direct Contradictions : Analysis of Simple Main Effects

Source	SS	DF	MS	F
A at B ₁	79.592	1	79.592	0.167
A at B ₂	187.79	1	187.79	0.394
B at A ₁	429.35	1	429.35	0.337
B at A ₂	294.401	1	294.401	0.231
Error	261711.012	56	476.982	

The analysis of the simple main effects showed that differences between the credible and incredible conditions of the 'white' group and of the 'coloured' group were not statistically significant.

9.2.9. Other problems (D.V._{3i})

None of the phase II 'analysts' classified encoding problems in this category (see pp 118 for definition).

9.2.10. Non-categorized problems (D.V._{3j})

There were only 22 non-categorized problems, therefore no statistical analysis was conducted (see pp 118 for definition). Nevertheless, for further information the means and standard deviations are given in the table below.

Table 9-29. D.V. 3_j (Non-Categorized) : Means and Standard Deviations

	B ₁ 'White'			B ₂ 'Coloured'			Combined Row Totals
	C ₁ Complainant	C ₂ Accused	Row Totals	C ₁ Complainant	C ₂ Accused	Row Totals	
A ₁ Credible	2.5 (7.071) 8	1.038 (2.034) 8	1.769 (5.003) 16	00 000 8	1.138 (3.217) 8	0.6 (1.61) 16	1.185 (3.307) 32
A ₂ Incredible	0.963 (2.722) 8	5.088 (11.690) 8	3.026 (7.206) 16	9.0 (6.881) 8	2.4 (5.079) 8	5.7 (6.03) 16	4.363 (6.618) 32
Combined column totals	1.732 (4.897) 16	3.063 (7.316) 16	2.398 (6.104) 32	4.6 (3.43) 16	1.769 (4.148) 16	3.185 (3.789) 32	2.792 (4.947) 64

10. DISCUSSION - PART I

10.1. Introduction

In the design of this study the direction of causality proposed between the D.V.'s and I.V._A in the theoretical prelude, has been *reversed*. Take for example I.V._A (the magistrates' assessments of credibility) and D.V._{2a} (the common users' ratings of the comprehensibility of testimonies). It was proposed that when *magistrates* perceive testimonies as highly comprehensible they judge the testimonies to be highly credible. In order to make this causal inference one must assume that magistrates' perceptions of comprehensibility are *at least similar* to common users' perceptions. Given this assumption, the causal relationship between I.V._A and D.V._{2a} is that D.V._{2a} (perceived comprehensibility) *determines* I.V._A (judged credibility). Thus, it is proposed that D.V._{2a} operates as an I.V. and that I.V._A functions as a D.V. ie, that magistrates' credibility judgements are *dependent* upon their perceptions of comprehensibility. The causal relationships between *all* of the D.V.'s and I.V._A have been reversed in this manner ie, D.V.₁ (comprehensibility of sides of cases), D.V._{2a} (comprehensibility of testimonies), D.V._{2b} (comprehensibility of CES's), D.V._{2c} (comprehensibility of PIS's) and; D.V.'s_{3a} to _{3h} (the relative percentage of each of the eight types of encoding problems). Therefore, to expand a little further it is proposed that when testimonies exhibit high proportions of irrelevant information, delayed information, empirical contradictions and expectation conflicts ie, high level encoding problems; magistrates judge them to be incredible. When testimonies contain high proportions of ambiguous wording, inadequate justifications, justifications missing and direct contradictions ie, low level encoding problems; magistrates judge them to be credible. Therefore, the assumption is

that high proportions of high level encoding problems *cause* magistrates to judge testimonies as being incredible. The D.V.'s and I.V._A were reversed in the design, because the D.V. had to be *interval data* in order to use the Anova for the analyses. I.V._A (credibility) is not interval data, it is *categorical data*, whereas the D.V.'s (comprehensibility ratings and relative percentages of encoding problems) are interval data.

To conclude, readers should take careful note of two issues: First, the D.V. measures were taken from *common users* and the I.V._A measures from *magistrates*. Therefore, the validity of the inferences made regarding causal relationships between comprehensibility and credibility, *depend* upon the 'truth' of the assumption that magistrates function similarly to common users. In each section to follow the validity of this assumption has been evaluated.

Second, although the direction of causality has been reversed in *the design*, the original direction proposed in the theoretical prelude has been reassumed throughout the interpretation of the findings ie, that perceptions of comprehensibility *determine* credibility judgements. This reversal is permissible without altering the validity of the findings. It improves readers comprehension!

10.2. Aim one (see pp 119)

10.2.1 Findings

Hypotheses one, two and four were supported in this study. The Anovas investigating the main effects of the credibility factor provided significant results with three of the D.V.'s ie, the comprehensibility of sides of cases (D.V.₁), testimonies (D.V._{2a}), and PIS's (D.V._{2c}). Cases

for the prosecution and cases for the defence, as well as individual testimonies and their PIS's that *magistrates* judged to be incredible, were also judged by *common users* to be more incomprehensible (less well-formed) than cases, testimonies and PIS's that *magistrates* judged to be credible.

Hypothesis three was not supported ie, the comprehensibility of CES's of testimonies (D.V._{2b}), was not significantly affected by the credibility factor. *Common users* did not find the CES's of testimonies that *magistrates* judged to be incredible, any more incomprehensible than the CES's of testimonies that *magistrates* judged to be credible.

Hypotheses five and six were not supported ie, the relative percentages of each of the eight types of encoding problems were not significantly affected by the credibility factor (D.V.'s_{3a} to _{3h}). Testimonies that *magistrates* judged to be incredible did not exhibit higher relative percentages of irrelevant information, delayed information, empirical contradictions or expectation conflicts; than testimonies that *magistrates* judged to be credible ie, they did not contain higher proportions of high level encoding problems. Testimonies that *magistrates* judged to be credible did not exhibit higher relative percentages of ambiguous wording, inadequate justifications, justifications missing and direct contradictions; than testimonies that *magistrates* judged to be incredible ie, they did not contain higher proportions of low level encoding problems.

10.2.2. Interpretation

Structural well-formedness and comprehensibility

It has been demonstrated empirically that well-formed discourse is highly comprehensible (Bower, 1976; Pratt *et al*, 1982). In this study the strength of the association between structural well-formedness and comprehensibility

was *not* tested statistically, because well-formedness was not 'measured' directly. Comprehensibility was 'measured' by the percentages of incomprehensible story elements in the various sections of court cases. The procedure followed was such that common users gave reasons for perceiving sets of story elements to be incomprehensible. These reasons were categorized into ten types of encoding problems ie, each *set* of incomprehensible story elements constituted an encoding problem of a particular type. Well-formedness could have been 'measured' using encoding problems as indicators. However, it was hypothesized that because encoding problems, even those of the same type, consisted of *different* numbers of incomprehensible story elements they would influence comprehensibility to differing degrees. Therefore, a sophisticated weighting system would have been necessary to form a valid measure of well-formedness. Due to the exploratory nature of this study the development of such a weighting system was not viable. Thus, a direct 'measure' of well-formedness was not made.

Had *each* incomprehensible story element constituted a *single* encoding problem there would have been a perfect positive correlation between comprehensibility and well-formedness ie, $r = +1$. However, a single encoding problem could consist of *any number* of incomprehensible story elements. Therefore, an imperfect positive correlation was expected ie, $r < 1$. Although the correlation expected was less than perfect, the procedure followed retained the positive relationship between well-formedness and comprehensibility. Hence for the purposes of this discussion, the inference has been made that common users perceived the well-formedness of testimony as 'determining' its comprehensibility.

Structural well-formedness and encoding problems

The pilot phase common users identified nine types of structural 'defects' (encoding problems). The first two paragraphs of each of the following eight sections comprise the common users' definitions and examples of each of the encoding problems. Since none of the experimental phase II 'analysts' used the category 'other problems', this type of problem will receive no further comment. The tenth category of 'non-categorized problems' is discussed subsequently. The researcher conducted a further qualitative analysis: The researcher considered each of the reasons that experimental phase I common users had given for finding each set of story elements incomprehensible. She then examined the definitions of the encoding problem category to which the experimental phase II 'analysts' had assigned each reason (and set of story elements). Finally, the researcher constructed a further definition of each encoding problem based on Schank and Abelson's macro-schematic model (Schank and Abelson, 1977). These definitions are presented following the examples given in the next eight sections.

The experimental phase I common users' reasoning showed that the encoding problems they experienced were 'caused' by 'defects' in the semantic structure of testimonies.

When these structural 'defects' are defined according to the parameters of the Schank and Abelson-model, each structural 'defect' is a violation of receivers' expectations ie, their norms of interpretation. Receivers' expectations are organized by their macro-schema that they use in comprehension. The macro-schema have four hierarchically organized levels ie, causal chain, scriptal, goals and plans, and thematic levels (from

lowest to highest). Each encoding problem has been classified according to the level at which the violation occurs. This is important because the higher the level of the violation the greater is the expected incomprehensibility (Schank and Abelson, 1977). Hereafter the terms structural 'defect', structural violation and encoding problem are used interchangeably.

In procedural guideline five it was merely *suggested* that the experimental phase I common users note how they would *correct* the encoding problems. This was proposed as one possible strategy for improving the clarity of reasoning. They reported this strategy to be most useful. In fact they provided corrections for *every* encoding problem they experienced. The common users attempted to reconcile inconsistent information and to provide missing data by constructing *bridging inferences*. These corrections clearly demonstrate receivers' reparative tendencies during comprehension (Schank and Abelson, 1977; Spiro, 1977).

Irrelevant information problems occurred when a witness presented information that did *not add* to common users' understanding of *the rest* of the information presented in testimony. Each irrelevant information problem consisted of any number of story elements presented consecutively. For example:

An accused stated that, (i) his friend lived near to the place where the robbery occurred. However, the accused did not say whether, (ii) this friend had any part in the robbery or whether, (iii) the accused was on his way to his friend's house at the time of the robbery. He did not attempt to incorporate the first piece of information with any of the later information.

Irrelevant information problems are violations of intentional schema expectations. These occur at the two highest levels of the macro-schema ie, goals and plans, and themes. They should cause serious disruptions to processing ie, high incomprehensibility (Schank and Abelson, 1977). They occurred when testimonies cued certain goals and plans, but the rest of the data presented in testimony did not aid common users in assessing whether or not the inferred goals and plans were *applicable*. Common users used thematic schema to infer the goals and plans ie, role themes. In segment (i) of the example, the role theme of friendship was cued. To enhance coherency common users created causal connections between this information and the rest of the data in the testimony. They used the role theme to make a number of plausible inferences, such as those appearing in segments (ii) and (iii). These predicted later information in the testimony. However, common users could not assess the accuracy of their predictions, because information for this assessment was *not* provided in the testimony. They reported great difficulty repairing these kinds of violations, because they had little confidence in their inferences. Bower

(1976) produced similar findings. (See Appendix IX.)

Delayed information problems occurred when information that would have *added* to the common users' understanding of the *relevance* of story elements in testimony, was not presented until *long after* the information it elucidated. Each delayed information problem consisted of any number of story elements presented consecutively. For example:

In the first part of a complainant's testimony he said that, (i) the accused grabbed him from behind and held him tightly so that he could not move. The common users knew that this was a robbery case. It was only much later on in the testimony that the complainant added that, (ii) the accused held him because he was trying to stop the accused's friend from robbing the complainant's friend.

Delayed information problems are violations of intentional schema expectations. These occur at the highest two levels of the macro-schema, ie, plans and goals, and themes. They should cause serious disruptions to processing ie, high incomprehensibility (Schank and Abelson, 1977). They occurred when common users *inferred* goals that conflicted with the goals *explicitated* by a witness later in testimony. Common users used thematic schema to infer the goals. In this example the role theme of *victim*, cued in segment (i), allowed receivers to predict the complainant's P-Goal to be the preservation of his life, health and property. The role theme of *robber*, signalled by segment (i), allowed common users to predict the accused's A-Goal to be the acquisition of the complainant's property. The D-CONT goal was also cued, with its planbox of OVERPOWER. Common users made these inferences following segment (i). However, at a much later point after segment (ii), common users predicted *different* goals.

For the complainant, the interpersonal theme of *friendship* was cued following segment (ii), and the associated expectancy rule of the protection of a friend from threat by engaging in counterthreat ie, the D-Goal plan of OVERPOWER. This conflicted with the former goal of self preservation that common users inferred following segment (i). Additionally, the second segment signalled the role theme of the accused to be *robber's accomplice* rather than *robber*. Common users predicted the D-Goal from segment (ii) to be D-AGENCY rather than D-CONT. The common users repaired this inconsistency with a bridging inference ie, the *co-existence* of the two role themes and their respective goals for each character. The characters were imputed to have aspired to the conflicting goals at *different* points in time. Thorndyke (1977) reported findings of a similar nature. (See Appendices VI, VII, VIII, IX and pp 79.)

Empirical contradiction problems occurred when witnesses presented a *sequence of events* that could not have *logically* occurred without the addition of information. Each empirical contradiction problem consisted of at least two opposing story elements. For example:

A complainant claimed that, (i) he was on the first floor of a shop and that, (ii) he saw the accused come into the shop on the ground floor. How could this have been possible?

Empirical contradictions are violations of intentional schema. These occur at the two highest levels of the macro-schema ie, goals and plans, and themes. They should cause serious disruptions to processing ie, high incomprehensibility (Schank and Abelson, 1977). They occurred when witnesses did not *explicate* the *controllable preconditions* for goal attainment. In this example the primitive act performed by the complainant in segment (ii)

is ATTEND to the accused. The D-Goal served by this action is, D-KNOW the location of the accused. The intentional schema provides the inference that the controllable precondition of D-KNOW is that the person one wishes to know about is in close proximity ie, that the accused was visible to the complainant. However, given the position of the complainant in segment (i) and the accused in segment (ii), this precondition was apparently not met. The rules characterizing the intentional schema state that for the achievement of the D-KNOW goal another D-Goal must be pursued to create the missing precondition. The common users inferred the D-Goal of D-PROX to facilitate the logic of the success of D-KNOW in segment (ii). Without this inference common users reported segments (i) and (ii) to be inconsistent and they could not connect them into a causal chain. Bennett and Feldman (1981) support this finding. (See Appendices I and VII and pp 79.)

Expectation conflict problems occurred when the information presented in testimony led common users to *expect* certain states and/or events and yet *other* states and/or events were said to have occurred. This made the information *unexpected* to common users, because witnesses did not provide an explanation for the unexpected state and/or event. Each expectation conflict problem consisted of at least two opposing story elements. For example:

An accused stated that, (i) he was looking for the complainant to buy wine from her and that, (ii) when he found her he walked straight past her and (iii) went to buy wine from another seller. The accused did not explain why he had changed his stated plans.

Expectation conflicts are violations of intentional schema expectations.

These occur at the highest levels of the macro-schema ie, plans and goals, and themes. They should cause serious disruptions to processing ie, high incomprehensibility (Schank and Abelson, 1977). They occurred when witnesses did not *explicate* the *uncontrollable preconditions* that caused a change of goals. In this example segment (i) triggered the inference that the main goal of the accused was the E-Goal of enjoying wine ie, the primitive act of INGEST wine. The D-Goals were D-KNOW the location of the source of wine ie, the complainant/seller; D-PROX ie, that the accused and complainant were in close proximity; and D-CONT ie, that the accused gained control of the wine. The intentional schema rules predicted that if the controllable preconditions for the desired primitive act were created by the attainment of D-Goals, the desired primitive act would occur and the main goal would be achieved (Schank and Abelson, 1977). In this case the controllable preconditions for achieving the D-CONT goal were attained by the accused ie, D-KNOW and D-PROX. Common users expected the D-CONT goal. Instead, the goal chain from D-KNOW in segment (ii) was restarted. Common users corrected this inconsistency by accepting the intentional schema rule that the planbox was *discontinued*, because the uncontrollable preconditions for the attainment of the D-Goal were missing ie, that there was some insurmountable obstacle preventing the attainment of the D-Goal. Therefore, another D-Goal had to be substituted. In this example, the common users inferred that one of the uncontrollable preconditions for achieving the D-CONT was missing eg, that the complainant did not have wine to sell or that she was too busy to sell the accused wine. This caused the accused to change his plans to that of D-KNOW the whereabouts of another wineseller in segment (iii). Bennett and Feldman (1981) support this finding. (See Appendices I, V, VI and VII.)

The term expectation conflict is an ambiguous one, because *all* of the encoding problems were caused by expectation conflicts ie, conflicts between the information provided in testimonies and the information predicted from schema (Robinson and Robinson, 1982).

Ambiguous wording problems occurred when witnesses used *personal pronouns* like them, their, he, she; *prepositions* like in, under, out; and the *definite article*; *without specifying* the person, place, object or state to which the terms applied. This confused common users as to what specific place, person, article and/or state was being referred to. Generally common users responded by asking when, where, what and/or who? Each ambiguous wording problem consisted of one or more story elements presented consecutively. For example:

An accused stated that, (i) they were talking in the street and that, (ii) they went in. He did not state *where* they went in to, nor whom *they* were.

Ambiguous wording problems are violations of script schema expectations. This is the second level of the macro-schema therefore these problems should not cause serious disruptions to processing (Schank and Abelson, 1977). These occurred when a witness assumed that common users were using the script chosen by *the witness* to understand testimony. Scripts provide information as to the props, roles, behaviours, people and locations that characterize familiar events. Witnesses generated ambiguous wording problems when recounting events which *they* considered stereotypical. The use of a script in *producing* testimony allowed witnesses to use the ambiguous pronouns, prepositions and the definite article as *summary cues* (Schank and Abelson, 1977). In this example, the stereotypical event was that of the accused talking to familiar people, in a street that was familiar to him and then going into a place that was well known to him. If

common users had used the same script as the witness, these cues would have signalled the more detailed information regarding who the people were and where they went to. However, the witnesses' assumption that receivers would be familiar with this event was erroneous. Common users reported that the correction of these structural ambiguities was difficult. They did not generate the detailed inferences necessary to understand the event. They resorted to forming *inadequate, general* inferences from their general knowledge about conversations in streets. There is added support for this kind of disruption (Cirilo, 1981; Pratt *et al*, 1982; Robinson and Robinson, 1982). (See pp 73.)

Inadequate justification problems occurred when witnesses claimed that certain events and/or states occurred or existed, but they provided *explanations* for the existence or occurrence of the phenomena that *common users* perceived as *inadequate or unsound*. Each inadequate justification problem consisted of any number of story elements presented consecutively. For example:

A complainant maintained that, (i) the accused was drunk at the time of the alleged robbery and that, (ii) he knew that the accused was drunk, because he saw the accused walking out of a bar. This reason is not adequate. Merely because someone walked out of a bar did not mean that he/she was necessarily drunk.

Inadequate justifications are violations of script schema expectations. This is the second level of the macro-schema therefore these problems should not cause severe disruptions to processing (Schank and Abelson, 1977). These problems came about when a witness claimed that one of the *results of a script* had occurred. However, the testimony did not provide

sufficient cues for common users to instantiate the script as a *non-fleeting script* in comprehension. In segment (i) the result of being drunk was explicated. This is a result of the § BAR. Additionally the *locale header* for the § BAR was presented in segment (ii). This information signalled common users to use the § BAR as a *fleeting script* for inferring the missing primitive act that was a precondition for the state change from being sober to being drunk ie, INGEST large quantities of alcohol. INGEST is the *maincon* in scene three of the § BAR. Common users inferred the missing primitive act from the fleeting § BAR. They had little confidence in their inferences, because the script was fleeting instead of non-fleeting (Schank and Abelson, 1977). The witness should have provided another script header eg, a maincon, central precondition, role or prop. Then the common users would have been confident in their inferences because they could have used the § BAR as a *non-fleeting script*. (See Appendix IV and pp 73.)

Justification missing problems occurred when witnesses claimed that certain states existed, but they did not *explain how* they knew these states existed nor *why* the states existed. This often left common users asking, how did they know that, and why did that occur? Each justification missing problem consisted of any number of story elements presented consecutively.

For example:

A complainant maintained that, (i) the accused was drunk at the time of alleged robbery. He did not state how he knew the accused was drunk nor why the accused was drunk.

Justification missing problems are violations of causal chain schema expectations. This is the lowest level of the macro-schema, therefore these problems should not cause serious disruptions to processing (Schank and Abelson, 1977). They occurred when witnesses *did not explicate* the

primitive acts that caused state changes *implied* in testimonies. Such omissions produced contradictions of the causal syntax rules. In this example there was a violation of the first causal syntax rule (see Appendix II) ie, that an action is prerequisite for a state change (Schank and Abelson, 1977). The state change implied in segment (i) was that the accused changed from a state of being sober to one of being drunk. However, the primitive act that is a precondition for this state change was *not* presented ie, INGEST alcohol. In order to correct this problem the common users inferred the missing primitive act from the causal semantic. It is noteworthy that justification missing problems are particular to language interactions in court. It is probable that in everyday interactions receivers do not consider this type of omission to be a schematic violation. It is generally accepted that producers do not validate every implied state change with the prerequisite primitive actions. This facilitates economy in communication. In court claims that are not supported *explicitly* are deemed problematic. These are not perceived as *evidence* but as mere *opinion*.

Direct contradiction problems occurred when *two states* that were *mutually exclusive* were said to have *both* occurred. This often left common users asking, which was it? Each direct contradiction consisted of at least two opposing story elements. For example:

An accused maintained that, (i) there were three people at the scene of a robbery, and then he claimed that, (ii) there were five people present.

Direct contradictions are violations of causal chain schema expectations. This is the lowest level of the macro-schema therefore they should not

cause serious disruptions to processing (Schank and Abelson, 1977). They occurred when witnesses *did not explicate* the primitive acts that caused state changes *explicated* in testimonies. These are contradictions of the causal syntax rules. In this example there was a violation of the first rule ie, that an action is prerequisite for a state change (see Appendix II) (Schank and Abelson, 1977). Segment (i) was the first state of there being three people present and segment (ii) was the second state of there being five people present. There was no action provided to enable this change of states. The common users repaired this inconsistency by inferring a primitive act to connect the two states ie, the PTRANS of two more people to the location of the first three. The inference was derived from the causal semantic.

To conclude:

The less identifiable and the more implicit are the temporal, causal and intentional relations among actions and states in discourse, the less comprehensible and memorable the discourse will prove to be.

(Thorndyke and Yekovich, 1980: 108)

Credibility and comprehensibility : Common users as compared to magistrates

In all simulation-type research there are difficulties in extrapolating *extra-court* findings to predict *in-court* processes (Lloyd-Bostock, 1981).

The pilot phase common users reported that their credibility judgements were influenced by the comprehensibility and by implication, the well-formedness of testimonies ie, they found that they judged less comprehensible (less well-formed) testimonies to be less credible. They reported that they perceived 'incomprehensibilities' (encoding problems) to be *cues of deception*. The experimental phase I common users rated testimonies that magistrates judged to be incredible as less comprehensible

(less well-formed), than testimonies that magistrates judged to be credible. This finding was inferred as supporting the pilot phase finding (above). These are *extra-court* findings. The question is whether *magistrates'* credibility judgements are shaped by the comprehensibility and structural well-formedness of testimonies? In this study it has been argued that because the magistrates and the common users were language processors of the same social class and ethnicity, they employed similar cognitive strategies in comprehending and assessing testimonies. However, they differed regarding their goals and the gravity of their comprehension tasks, their prior experience at comprehending testimonies and the range of variables that affected their final judgements.

The *common users* accomplished a *recognition-type* task during the first phase of the experimental procedure ie, the recognition of incomprehensible story elements (encoding problems). An informal analysis of magistrates' judgements, showed that *magistrates* also performed this recognition task during the comprehension of testimonies. However, they not only had to *recognise* the incomprehensible sections of testimonies *during* comprehension, they also had to *recall* these 'incomprehensibilities' during their judgements. In addition they had to *recall the gist* of each testimony in a court case (see Appendix XVI). Their judgements consisted of summaries of the gist of each testimony and statements regarding the 'incomprehensibilities' they perceived in each testimony. This served as the rationale for their credibility judgements and by implication their verdicts.

This difference between the tasks performed by the magistrates as compared with the common users was not expected to invalidate the postulate that comprehensibility 'determines' credibility. Although the magistrates

performed a more complex, problem solving task that was reliant on *long term* memory processes; it has been shown that macro-schema are used to an even greater extent in comprehending and recalling lengthy discourse to solve complex problems (Cirilo, 1981). Therefore it is theoretically sound to hypothesize that magistrates do process testimony similarly to common users ie, using macro-schema, and that because they rely more heavily upon their macro-schema to organize information, schematic violations ('incomprehensibilities' or encoding problems) are likely to disrupt their comprehension to an even greater extent than that experienced by common users. This means that they may experience higher levels of incomprehensibility due to encoding problems, when testimonies are less well-formed. Since theirs is the more *grave* task of assessing credibility, such schematic violations are *more* likely to be perceived as cues of deception and therefore to be well-encoded for recall during their judgements ie, Von Restorf's effect will operate. To conclude, it is plausible that the comprehensibility (well-formedness) of testimony influences a magistrate's perception of its credibility.

Should the abovementioned process operate in court: The magistrate would assess the well-formedness (comprehensibility) of each of the testimonies for the prosecution. He/she would then form an overall impression of the comprehensibility of the case for the prosecution. This would enable him/her to decide the overall credibility of the prosecution and defence cases in the same manner. The two credibility assessments, one for the entire prosecution case and one for the entire defence case, would finally be compared. If the prosecution case was judged more credible, the verdict would be guilty and the accused would be convicted. If the defence case was judged more credible, the verdict would be not guilty and the accused would be acquitted. Therefore comprehensibility would be one central

factor influencing magistrates' verdicts. (See pp 9.)

There are many other extra-linguistic and para-linguistic variables that may contribute to the final verdict eg, appearance, gestures, accent, prior convictions etc. The *source* credibility of witnesses may improve or detract from the credibility of their *messages*. It has been found that when receivers perceive low *source* credibility they also perceive low *message* credibility (Kerr and Bray, 1982). The implication for this study is that magistrates may pre-judge the credibility of *witnesses* using extra-linguistic indicators eg, appearance, social class, ethnicity etc. They may then begin to assess the credibility of *testimonies* using para-linguistic and linguistic indicators. These latter assessments of *message* credibility would be influenced by magistrates' former perceptions of witnesses' *source* credibility ie, magistrates who judge a witness to be implausible would be more likely to perceive their testimony to be incredible. However, more conclusive statements of the interrelations between source and message credibility *in court*, await further research.

Comprehensibility of PIS's and CES's, and credibility

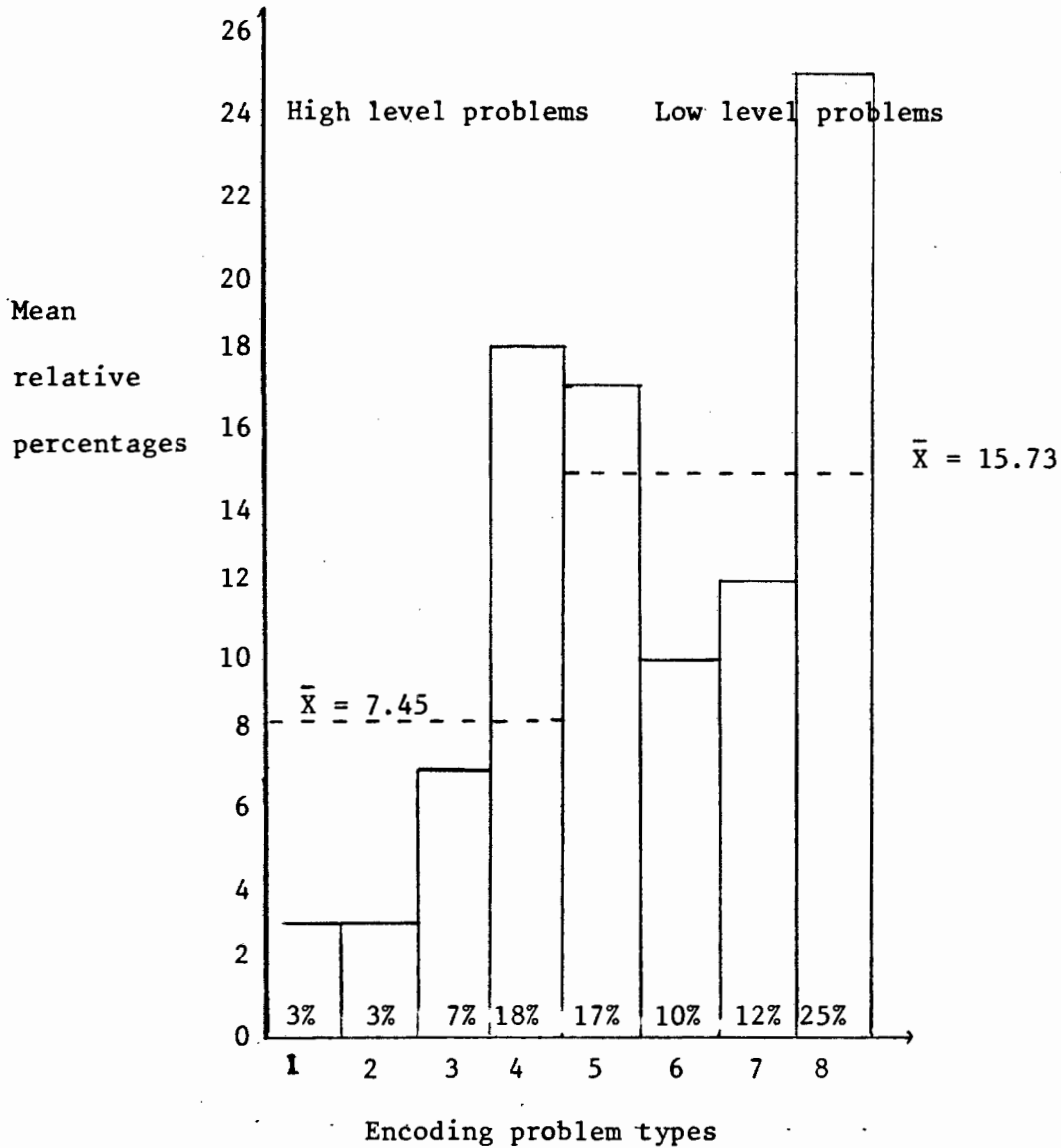
This study showed that it was the *PIS's* of testimonies that magistrates had judged to be incredible, that common users perceived to be less comprehensible. Common users did *not* perceive the *CES's* of testimonies that magistrates had judged to be incredible and those that magistrates had judged to be credible, as differing in their levels of comprehensibility. Given the inference that magistrates function as common users (see above), it may be deduced that magistrates focus upon the comprehensibility of the *PIS's* of testimonies when assessing the credibility of *entire* testimonies in court. An informal analysis of testimonies provided theoretical support for this inference: A *PIS* is likely to play the *central* role in determining the

the credibility of an entire testimony, because it is in the PIS that the witness provides the basic information that the magistrate uses to fill his/her macro-schema 'slots'. The data presented in the CES is of a more peripheral nature. It serves to *supplement* the magistrate's existing macro-propositions ie, those formed from information delivered during the PIS. Additionally the information presented in the PIS is not shaped to any substantial extent by questioning. The PIS is the witness's endeavour. Therefore it may be deduced that it is *magistrates' perceptions* of the efficacy of witnesses' linguistic efforts that determines the credibility of testimonies. The notion that prosecutors' questioning during cross examination produces structural ill-formedness and incomprehensibility of *entire* testimonies, is not supported. Had this been the case *common* users would have perceived differences in the *comprehensibility* of the CES's of testimonies judged by magistrates to be credible and incredible. However, the procedure followed in this study may have obscured the effects of cross examination on comprehensibility. The *common* users were instructed not to note comprehension difficulties that were repetitious. Problems that first occurred in PIS's and re-occurred in CES's were *not* reported. The scores for D.V._{2b} (comprehensibility of CES's) included those problems *created* by questioning. This prevented an analysis of the role played by questioning in *emphasizing* 'incomprehensibilities' (encoding problems) during cross examination. Repeated questioning may *emphasize* encoding problems making these more memorable to magistrates. This may increase Von Restorf's effect in court. Hence, a conclusive *comment* of the effects of questioning on perceived comprehensibility and credibility *awaits* further investigation. No conclusion may be drawn regarding the relative 'contributions' of the PIS's as compared to the CES's, to the *comprehensibility* and credibility of *entire* testimonies.

Comparing types of encoding problems

Figure 10-1. illustrates different proportions of each type of encoding problem constituting the total complement of encoding problems in testimonies. In this study encoding problems are shown to be factors that may detract from the credibility of testimonies. Thus, readers may take issue with an unexplained omission of statistical tests of these apparently relevant differences. However, as yet there is no accurate weighting system to estimate the extent to which each type detracts from credibility and the possibility that each type may decrease credibility to a different degree, must be considered. Hypothesize that two direct contradictions decrease credibility to the same extent as a single justification missing. A mean percentage of 25 direct contradictions could then be said to decrease credibility to a similar degree as a mean percentage of 12 justifications missing. Therefore in this instance, establishing a statistically significant difference in the mean percentages of these two types of encoding problems would be of little practical relevance.

Figure 10-1. Graph of Mean Relative Percentages of Each Encoding Problem



- Key:
- | | |
|------------------------------|-------------------------------|
| 1 - Irrelevant information | 5 - Ambiguous wording |
| 2 - Delayed information | 6 - Inadequate justifications |
| 3 - Empirical contradictions | 7 - Justifications missing |
| 4 - Expectation conflicts | 8 - Direct contradictions |

It is interesting to note that expectation conflicts, ambiguous wording and direct contradictions seemed to occur more frequently than the other five types of encoding problems ie, 18%, 17% and 25% respectively. Conclusions regarding the importance of varying frequencies of each type of encoding problem must await the development of a valid weighting system.

The common users noted both high and low level schematic violations (incomprehensibilities/encoding problems) as indicators of incomprehensibility (ill-formedness). The combined mean relative percentage for the high level problems was 7.45% whereas for the low level it was 15.73%. This seems to indicate that common users identified more low level problems than high level problems. However, for the reasons mentioned above this difference was not tested statistically (see Fig 10-2. p 181).

In order to develop the hypotheses regarding the relative distribution of the eight types of encoding problems the assumption that the magistrates had functioned as common users, was taken as given. The expectation was that the magistrates had judged highly incomprehensible testimonies ie, those that had been less well-formed due to many encoding problems; to be incredible. Similarly, they had judged more well-formed (fewer encoding problems), more comprehensible testimonies to be credible. Empirical findings have shown that high level schematic violations (incomprehensibilities/encoding problems) cause greater disruptions to processing (higher incomprehensibility) than low level violations (Black, 1978; Thorndyke, 1977). Therefore it was hypothesized that the magistrates had judged testimonies to be incredible, because these testimonies had 'caused' the magistrates more high level encoding problems (schematic violations). Similarly they had judged testimonies to be credible, because these testimonies had 'caused' them fewer high level encoding problems. However, the results showed no

significant differences between the relative percentages of each of the four types of high level problems ie, irrelevant information, delayed information, empirical contradictions and expectation conflicts; across testimonies that the magistrates had judged to be credible as compared to those they had judged to be incredible. This is surprising and contrary to theoretical expectations. However, the finding may have been due to a procedural factor and/or differences in the cognitive processing of the magistrates and the common users. It must be recalled that it was the *common users* and not the magistrates who provided the measures for these D.V.'s (_{3a} to _{3h}) ie, the relative percentages of each type of encoding problem.

Procedural Factor

Some of the encoding problems were not included in the statistical analyses. These were the problems that were *not* placed in the same category by at least two of the 'analysts' ie, the non-categorizable problems. Had these problems been categorized and included, significant differences may have been demonstrated. A higher mean relative percentage of the encoding problems in incredible testimonies were not categorized ie, 4,36 as compared to 1,17 in credible testimonies. More significantly, 36.36 percent of the non-categorized problems were high level problems ie, irrelevant information, empirical contradictions and expectation conflicts. Testimonies judged by magistrates to be incredible exhibited higher mean relative percentages of empirical contradiction and delayed information problems than credible testimonies ie, 8,616 and 4,2; and 3,447 and 1,576 respectively. Although the differences did not reach statistical significance, had the non-categorized problems been categorized the differences may have reach significance. Additionally there were

disagreements over the categories into which some of the problems were to be placed ie, when only two out of the three 'analysts' agreed on the category. The highest level of disagreement occurred over the categorization of problems as direct as opposed to empirical contradictions ie, 25,4 percent of the disagreements. The second highest level was between empirical contradictions and expectation conflicts ie, 21 percent of the disagreements. Since empirical contradictions and expectation conflicts are high level problems, their reclassification may have altered the non significance of the statistical findings. Total agreement among the 'analysts' was not expected. The high levels of disagreement regarding empirical and direct contradictions and between empirical contradictions and expectation conflicts, were due to the subtlety of the distinctions among these categories. Empirical contradictions and expectation conflicts both result from *missing preconditions* ie, controllable preconditions and preconditions causing goal changes, respectively. Empirical and direct contradictions are both caused by *missing information* regarding *primitive acts* ie, controllable preconditions for primitive acts and primitive acts causing state changes, respectively (see pp 164 and 170).

Differences : common users and magistrates

Figure 10-2. Common Users' Encoding Problems

Encoding problem types (schematic violation)	Types of macro-schematic violation	Level of violation	
Irrelevant Information	Intentional schema (themes and goals and plans)	3/4	H I G H
Delayed Information	Intentional schema (themes and goals and plans)	3/4	L E V E L
Empirical Contradictions	Intentional schema (themes and goals and plans)	3/4	L
Expectation Conflicts	Intentional schema (themes and goals and plans)	3/4	
Ambiguous Wording	Script schema	2	L O W
Inadequate Justifications	Script schema	2	L E V E L
Justifications Missing	Causal chain schema	1	L
Direct Contraditions	Causal chain schema	1	L

An informal analysis of the magistrates' judgements showed that they concentrated solely upon high level violations ie, violations of intentional schema (see Appendix XVI). This difference between the common users and the magistrates may have been due to their different levels of familiarity/ experience in processing testimonial discourse. Schank and Abelson (1977) maintained that receivers who are familiar with processing a certain type of discourse use high level macro-schema in comprehension. Had the

common users been more experienced at processing testimonial discourse, they may have identified more high level violations (encoding problems). Consequently, the differences between the relative percentages of each of the high level types of encoding problems may have reached significance. This should not be taken to imply that the magistrates did *not perceive* low level violations. It is more probable that although they perceived low level problems, the high information processing load and the restricted time available to them in verbalizing their judgements prevented them from verbalizing the low level problems. Rather, their focus was upon high level violations in delivering the rationale for their verdicts. After completing this study, the researcher has decided that the measures for the high level problems should have been *combined* and compared to a combined measure for the low level problems. Further studies have been planned.

Additionally, violations (encoding problems) differ regarding their relationships to *critical* causal chains in testimonies ie, they may be *peripheral to*, or may occur *in* critical causal chains (Black and Bower, 1980). The magistrates' task was to determine whether or not a *legal offence* had been committed. Therefore it was the legal offence in any case that determined the critical causal chain of events. For example, in one of the robbery cases in this study the highest level state change was the change of the complainants' state from having control of his property, to not having control of his property. This was 'caused' by the highest level event ie, the primitive act of the PTRANS of his radio (property) to the accused. However, many other planboxes were followed to attain this state change. The lowest level, 'successful' planbox was the one which included the primitive act of PTRANS of the radio to the

accused. All the events and state changes (planboxes and subgoals) that connected this lowest level, successful state change to the highest level state change, are termed the *critical* causal chain (see Appendix III). The common users were *not* required to assess whether a legal offence had been committed. Therefore, they noted violations both *in* and peripheral to critical causal chains (see Appendix XVI).

Violations occurring *in* critical causal chains cause greater disruptions to processing (incomprehensibility) than those peripheral to critical causal chains (Black and Bower, 1980). Hence, low level problems that occurred *in* critical causal chains may have 'caused' both common users and magistrates greater incomprehensibility, than high level problems that were peripheral to critical causal chains. A weighting system should have been developed that incorporated both the hierarchical level and the relationship of violations to the critical causal chain. Had the D.V.'s s_{3a} to s_{3h} been developed to reflect both of these factors, significant differences between the relative percentages of each of the eight types of encoding problems may have been demonstrated. Conclusions regarding the differential effects of each type and level of encoding problem upon magistrates' comprehensibility and credibility assessments, await further investigation.

11. DISCUSSION - PART II

11.1. Aim two (see pp 120)

11.1.1. Findings

Hypotheses one and three were supported in this study. The Anovas

investigating the main effects of the ethnicity factor provided significant results with two of the D.V.'s ie, the comprehensibility of testimonies and PIS's. Common users judged the testimonies and PIS's of 'coloured' witnesses to be more incomprehensible than those of 'white' witnesses.

Hypotheses two and five were not supported. The CES's of testimonies and the relative percentages of each of the eight types of encoding problems were not significantly affected by the ethnicity factor. Common users did *not* find the CES's of 'coloured' witnesses' testimonies any more incomprehensible than the CES's of 'white' witnesses' testimonies. 'Coloured' witnesses' testimonies did not exhibit higher relative percentages of irrelevant information, delayed information, empirical contradictions and expectation conflicts; than 'white' witnesses' testimonies ie, they did not contain higher proportions of high level encoding problems. 'White' witnesses' testimonies did not exhibit higher relative percentages of ambiguous wording, inadequate justifications and justifications missing, than 'coloured' witnesses' testimonies ie, they did not contain higher proportions of low level encoding problems.

Hypothesis six was not tested directly, but was dependent on the affirmation of hypothesis two from aim one and hypothesis one from aim two (see pp 119 & 120). These hypotheses were affirmed ie, common users found testimonies that *magistrates* had judged to be incredible and testimonies delivered by 'coloured' witnesses, to be more incomprehensible. Therefore, *should magistrates* function as the common users did, they would judge 'coloured' witnesses' testimonies to be less comprehensible and therefore less credible than 'white' witnesses' testimonies. This implies that 'coloured' witnesses who testify 'against' 'white' witnesses, would be relatively disadvantaged.

11.1.2. Interpretation

Ethnicity and credibility : Magistrates and common users

The notion that magistrates function as common users has been supported theoretically throughout this thesis. When this postulate is accepted, the deduction is that the magistrates in this study judged testimonies to be incredible, because they perceived these to be less incomprehensible (less well-formed), than the testimonies they had judged to be credible. In this study, low comprehensibility was a reliable indicator of structural ill-formedness (see pp 111). The common users found 'coloureds'' testimonies to be less comprehensible (less well-formed) than 'whites'' testimonies. The inference is that the magistrates also perceived 'coloureds'' testimonies to be less comprehensible (less well-formed) than those of 'whites'. The corollary is that the magistrates judged 'coloureds'' testimonies to be less credible than 'whites'', because they perceived 'coloureds'' testimonies to be less comprehensible (less well-formed).

In court cases magistrates' credibility assessments are *relative*. Therefore in an interracial case, 'coloured' witnesses would be likely to operate at a disadvantage relative to 'whites'. For example, a 'coloured' accused would be more likely to be perceived as less comprehensible and therefore less credible by a 'white' magistrate, than his/her 'white' complainant counterpart. This would increase the probability of a guilty verdict and conviction.

In this study it is most significant that 'white' common users judged the comprehensibility of 'coloureds'' testimonies to be lower and that 'white' magistrates judge the comprehensibility and credibility of 'coloureds'' testimonies *in court*. Once again it has been accepted that magistrates

function as common users. Therefore the question is, why did 'white' magistrates and common users perceive 'coloureds'' testimonies to be less comprehensible than 'whites'' testimonies?

Two explanations have been proposed:

First explanation

The 1984 Human Sciences Research Council Multipurpose Survey showed that the majority of 'coloured' respondents had *no* day to day social interaction with 'white' respondents. This finding is no surprise since 'coloured' and 'white' South Africans are required by law, to live and socialize in geographically separate areas. It is because 'coloured' and 'white' South Africans live and function in different social realities, that their world knowledge differs. The contents of their macro-schemas differ and therefore so do their norms for the production and interpretation of discourse. Therefore, it has been inferred that the macro-schematic knowledge and norms of interpretation that were used by the 'white' common users/magistrates to *understand* the testimonies in this study, differed from the macro-schematic knowledge and norms of production that were used by the 'coloured' witnesses to produce the testimonies in this study. This difference could have produced the 'white' common users'/magistrates' perceptions of lowered comprehensibility of 'coloureds'' testimonies. The use of different macro-schematic knowledge and norms of interpretation by 'white' common users/magistrates, could have 'caused' them to perceive more schematic violations (encoding problems/incomprehensibilities) in 'coloureds'' testimonies. Should magistrates function as the pilot phase common users did, they would use the higher levels of schematic violations in 'coloureds'' testimonies to indicate higher levels of implausibility (deception). This would function to the disadvantage of 'coloured' witnesses

in interracial criminal trials.

Of additional significance is the notion that 'coloured' South Africans are unlikely to acquire 'white' norms of interpretation and production, because they receive a different quantity and quality of education. The median highest standard of education attained by 'coloured' respondents was a standard six or seven school education, whereas for 'white' respondents it was a standard ten and above (Human Sciences Research Council Multipurpose Survey, 1984). To conclude, the separation of the social, residential and educational 'realities' of 'coloured' and 'white' South Africans serves to maintain the increased likelihood of inter-ethnic incomprehensibility.

The first explanation has focused upon possible ethnic differences in the comprehensibility and credibility of testimony ie, *message* credibility. The process postulated is that 'white' magistrates perceive 'coloureds'' testimonies to be less comprehensible and therefore less credible than 'whites'' testimonies. This lowered perception of message credibility influences magistrates' judgements of the trustworthiness of 'coloured' witnesses ie, their *source* credibility. Therefore, it is proposed that magistrates' perceptions of message credibility influence their perceptions of source credibility.

Second explanation

The Multipurpose Survey showed that the majority of 'white' respondents considered 'coloured' South Africans to be *less good, just, honest, reliable* and *competent*, than 'white' South Africans (Human Sciences Research Council Multipurpose Survey, 1984). These findings support the notion that 'white'

South Africans are likely to form the general hypothesis that 'coloured' South Africans are more deceptive (less credible) than 'whites' ie, they have lower source credibility. It has been found that when people expect to be deceived they *overestimate* the number of 'lies' that they perceive (Miller and Burgoon, 1982). These postulates have been extrapolated to explain courtroom interactions. The pilot phase common users reported using schematic violations (encoding problems/incomprehensibilities) as indicators of deception. The experimental phase I common users perceived 'coloureds'' testimonies to contain higher percentages of these 'deception indicators'. Should magistrates function as common users, it may be inferred that they also perceive higher incidences of incomprehensibilities ('deception indicators') in 'coloureds'' testimonies, because they *overestimate* the number of 'lies' (incomprehensibilities) in 'coloureds'' testimonies. This explanation follows from the postulate that 'white' magistrates operate with the hypothesis that 'coloured' witnesses have lower *source* credibility than 'whites'. Magistrates are expected to 'test' this hypothesis by consciously or unconsciously overestimating the incidence of incomprehensibilities that they perceive in 'coloureds'' testimonies. This serves to 'prove' their hypothesis regarding low source credibility by 'demonstrating' low *message* credibility. Magistrates may then reach the conclusion that 'coloured' witnesses are more deceptive and therefore less credible than 'whites'! This is a process of self-fulfilling hypothesis testing.

Alternatively, 'white' magistrates' perceptions of the lower source credibility of 'coloured' witnesses may *not directly* lower their perceptions of 'coloureds'' message credibility. Magistrates may assess source credibility and message credibility *independently*. In this case,

the message credibility of 'coloureds' testimonies is still expected to be lower than that of 'whites', due to the differences between 'white' magistrates' and 'coloured' witnesses' macro-schematic knowledge and norms of production and interpretation (as was discussed in the first explanation). Therefore, the *combination* of magistrates' perceptions of 'coloureds' lower source credibility and message credibility would still produce an *overall* decrease in the perceived plausibility of 'coloured' witnesses relative to 'white' witnesses in court.

At first, this account may not appear to explain the behaviour of the common users in this study. The experimental phase I common users were apparently unaware of the ethnic identities of the witnesses. The procedure was designed to prevent this knowledge from influencing the common users' assessments. However, certain *speech markers* may have identified the witnesses' ethnicity (Roberts, 1979). The dialect used by the majority of 'coloured' South Africans ie, 'gamtal', is an accurate marker of their ethnic identity. 'Coloured' witnesses who did not use this obvious dialect may also have been identified as 'coloured' by the common users. Certain aspects of endemic grammar, greetings and lexical preferences characterize the language spoken by the 'coloured' ethnic group (McCormick, 1983). Since the original court transcripts were used to avoid altering the semantic structure of testimonies, the effects of these speech markers could not be controlled for. The common users may have been consciously or unconsciously aware of the different ethnic identities of the 'coloured' and 'white' witnesses. Therefore, the common users' as well as the magistrates' behaviour may be explained using this second account.

To conclude, it is suggested that the behaviour of 'white' magistrates is more succinctly accounted for by the second explanation. However, the findings do not permit a final decision regarding the most applicable account. Additional research would be necessary to assess the comparative validity of such competing explanations.

But in the measure in which you belong to my own community, you have been subjected to a linguistic and cultural training similar to my own and I have valid grounds for supposing that your propositions have a similar meaning for both of us. And the 'hypothesis' which I make when I hear you speak, and which you make speaking to me, is confirmed for both of us by your and my total behaviour.

(Cicourel, 1973: 53/4)

Ethnicity, PIS's, CES's and credibility

This study showed that it was the PIS's of 'coloureds'' testimonies that common users found to be more incomprehensible than the PIS's of 'whites'' testimonies. The common users did not perceive differences between the comprehensibility of the CES's of 'coloureds'' and 'whites'' testimonies. Once again let us assume that 'white' magistrates function as 'white' common users. It may be deduced that magistrates focus upon the comprehensibility of the PIS's of testimonies when judging the credibility of *entire* testimonies in court ie, the comprehensibility of the CES's do not have substantial effects. The argument has already been made that the procedural instruction that common users were not to repeat 'incomprehensibilities' that first occurred in the PIS's and reoccurred in the CES's of testimonies, could have obscured the effects of the incomprehensibility of CES's on overall credibility. The same argument could explain the non significant findings regarding the differences between the CES's of 'coloureds'' and 'whites'' testimonies. (The reader

is referred back to p 175 as this argument has not been repeated.) The conclusion also remains constant ie, that the findings do not permit conclusions to be drawn regarding the relative 'contributions' that are made to credibility by the PIS's and CES's of 'coloureds'' as compared to 'whites'' testimonies.

Interracial effects

The possible effects of witnesses' ethnic identity upon magistrates'/ common users' perceptions of their credibility has been discussed in the previous section (see p 186). The question of how the lowered credibility of 'coloured' witnesses operates to their relative disadvantage in court, has received little systematic attention. Since only six of the 32 sample cases were interracial, a separate statistical analysis was not applicable. However, a qualitative analysis was conducted to evaluate hypothesis six. Three of the cases comprised 'white' complainants and 'coloured' accused, with two of the 'white' complainants being judged incredible and one credible, by magistrates. Three of the cases comprised 'coloured' complainants and 'white' accused, with one of the 'white' accused being judged incredible and two credible, by magistrates (see Appendix XVII). Readers should noted that the assumption that magistrates function as common users has been adopted throughout the following two sections.

'White' complainants 'versus' 'coloured' accused

The qualitative analysis showed that: In order for 'white' magistrates to perceive 'coloured' accuseds' testimonies as credible, the accused had to present testimonies comprising very well-formed PIS's and CES's relative

to their 'white' complainant counterparts ie, the mean percentages of incomprehensibility were 19.15% versus 45.4% for the entire testimonies, 22.4% versus 47.65% for the CES's; and 29.15% versus 44.5% for the PIS's, respectively. Therefore, the PIS's and CES's of 'coloured' accused who were judged by magistrates to be credible, appeared to be much more comprehensible (more well-formed) than the PIS's and CES's of their 'white' complainant counterparts, whom magistrates judged to be incredible.

However, when a 'coloured accused' presented a PIS that was similarly well-formed (comprehensible) to that of his 'white' complainant counterpart; the magistrate judged the 'coloured' accused to be incredible ie, 19.4% versus 23.5% incomprehensibility, respectively. It appeared that the magistrates' perception of the 'coloured' accuseds' credibility was lowered by the higher incomprehensibility (lower well-formedness) of his CES in relation to his 'white' counterpart ie, 26.2% versus 11.8% incomprehensibility, respectively. The higher incomprehensibility of the 'coloured' accuseds' CES seemed to be produced by the prosecutors' questioning. The validity of this explanation requires further testing.

However, it seems that in order for 'coloured' accused to attain credibility they must present PIS's that are substantially *more* well-formed (more comprehensible), than their 'white' complainant counterparts. In this case, there are so few schematic violations (incomprehensibilities) to begin with, that this seems to prevent prosecutors emphasizing schematic violations from PIS's during cross examination. However, when 'coloured' accused and 'white' complainants deliver PIS's that are *similarly* well-formed (comprehensible), prosecutors seem to decrease the comprehensibility and credibility of 'coloured' accuseds' testimonies in CES's, to below that of their 'white' complainant counterparts. Prosecutors seemed to

emphasize schematic violations (incomprehensibilities) that occurred in accuseds' PIS's during cross examination. Therefore, 'coloured' accused may run a higher risk of being convicted due to their lower relative credibility in interracial cases. This speculative account provides support for the disadvantaging of 'coloured' accused relative to 'white' complainants in court.

'Coloured' complainants 'versus' 'white' accused

The qualitative analysis showed that: In order for a 'white' magistrate to perceive a 'coloured' complainant's testimony as credible, the complainant had to present a PIS that was *substantially* more well-formed (comprehensible) than his 'white' accused counterpart ie, 7.2% versus 41.1% incomprehensibility, respectively. Prosecutors appeared to decrease the overall comprehensibility (credibility) of 'coloured' witnesses' testimonies during cross examination to a greater extent than 'whites' ie, the mean percentages of incomprehensibility in CES's were 46.07% versus 23.2%, respectively. When a 'coloured' complainant began with a very well-formed (comprehensible) PIS, the prosecutors' effect (as was mentioned above) did not lower the overall comprehensibility (credibility) of his testimony to below that of his 'white' accused counterpart. In consequence, the magistrate perceived the 'white' accused as less credible than the 'coloured' complainant and he was convicted. However, when 'coloured' complainants presented PIS's that were *substantially* less well-formed (more incomprehensible) than their 'white' accused counterparts, the prosecutors effect was significant ie, the mean percentages of incomprehensibility of the PIS's were 44.5% and 29.15%; and the CES's were 47.65% and 22.4%; respectively. The prosecutors' questioning during cross examination appeared to emphasize

the schematic violations (incomprehensibilities) from the PIS's of 'coloured' complainants' testimonies. This reduced the overall comprehensibility (credibility) of 'coloured' complainants' testimonies to *well* below that of their 'white' accused counterparts ie, the mean percentages of incomprehensibility in testimonies were 45.4% and 19.15%, respectively. Magistrates then judged the 'coloured' complainants to be incredible. The 'white' accused were acquitted and the 'coloured' complainants 'lost' their cases. This interpretation supports the disadvantaging of 'coloured' complainants relative to 'white' accused in court.

To conclude, it is postulated that 'white' magistrates are more likely to perceive 'coloured' witnesses' testimonies to be less well-formed, less comprehensible and therefore less credible than 'white' witnesses' testimonies. This disadvantages 'coloured' witnesses in court cases where their credibility is judged relative to 'white' witnesses ie, in interracial cases. Since these conclusions were reached using a small sample and qualitative techniques, further investigations are necessary to clarify the significance of the effects.

Ethnicity and types of encoding problems

It was hypothesized that magistrates had judged testimonies to be incredible because they contained higher relative percentages of the four high level encoding problems, irrelevant information, delayed information, empirical contradictions and expectation conflicts. This hypothesis was not supported. (The reader is referred back to p 178 for the details of the rationale.) A related hypothesis was formed regarding the ethnic differences expected ie, that magistrates would

find 'coloureds'' testimonies more incomprehensible than 'whites'', because they contained higher relative percentages of the four high level encoding problems. This hypothesis was not supported. The reasons for this lack of support are identical to those discussed in relation to the credibility factor and will not be discussed further (see p 178).

11.2. Aim three (see p 121)

11.2.1. Findings

There was no statistical support for hypotheses one, two, three, four and five. The Anovas investigating the effects of the court role factor provided non significant results for the following D.V.'s: the comprehensibility of testimonies (D.V._{2a}), PIS's, (D.V._{2c}) CES's, (D.V._{2b}) and the relative percentages of all the encoding problems except expectation conflicts (D.V.'s_{3a} to _{3h}).

Common users did not perceive accuseds' testimonies, CES's or PIS's to be any more incomprehensible than complainants'. Accuseds' testimonies did not contain higher relative percentages of irrelevant information, delayed information or empirical contradictions; than complainants' testimonies ie, they did not contain higher proportions of three of the four high level encoding problems. Complainants' testimonies did not exhibit higher relative percentages of ambiguous wording, inadequate justifications, justifications missing or direct contradictions; than accuseds' testimonies ie, they did not contain higher proportions of any of the four low level encoding problems.

Hypothesis six was not tested directly, but was dependent on the affirmation

of hypothesis two from aim one and hypothesis one from aim three (see p 119 & 121). The former hypothesis was affirmed ie, common users found testimonies that magistrates had judged incredible to be more incomprehensible. However, the latter hypothesis was not affirmed ie, common users did not find accuseds' testimonies more incomprehensible. Therefore, no conclusion has been formed regarding the disadvantaging of undefended accused relative to complainants in court.

Accuseds' testimonies exhibited higher relative percentages of the high level expectation conflicts than complainants' testimonies.

11.2.2. Interpretation

Court role and credibility: Magistrates and common users

Once again let it be assumed that magistrates functioned as common users. The findings showed that common users did not perceive accuseds' testimonies to be less comprehensible (less well-formed) than complainants'. It may be inferred that magistrates do not perceive complainants' and accuseds' testimonies as differing in their comprehensibility. It has been deduced that magistrates judge highly incomprehensible testimonies to be incredible and highly comprehensible testimonies to be credible. Therefore, magistrates would not perceive accuseds' and complainants' testimonies as differing in their credibility. This would mean that the accusitorial system does not disadvantage undefended accused relative to complainants. However, there are two factors that invalidate this conclusion:

First, the differential effects that prosecutors' questioning may have on the comprehensibility of accuseds' and complainants' CES's, may have been obscured by the procedure that was followed (see p 179).

Second, the common users read complainants' testimonies first and only later did they read accuseds' testimonies. It has been shown that when two narratives are read, the *second* is more comprehensible than the first. This is because the first narrative serves to instantiate the macro-schematic 'foundations' for comprehension. The second narrative is comprehended using this already instantiated macro-schema (Thorndyke and Yekovich, 1980). Should this order-effect have operated, the common users would have perceived accuseds' testimonies as more comprehensible than complainants'. This was not demonstrated. However, it was also postulated that prosecutors may question undefended accused in a manner that decreases the comprehensibility of their testimonies. This was the postulate from which the hypotheses concerning the effects of court role on comprehensibility were derived ie, aim **three**-hypotheses. Had the prosecutors' debilitating effect operated in combination with the advantageous order-effects, the resulting differences in the overall comprehensibility of accused and complainants could have been counter-balanced. This could have produced the non significant findings demonstrated in this study. Magistrates hear complainants and accuseds testimonies in the same order as the common users. Therefore, it may be deduced that this explanation describes processes in court. However, due to the possible confounding of the order and prosecutors' effects, without further investigation no conclusion may be made regarding the possible disadvantaging of undefended accused in accusitorial proceedings.

Encoding problem types

The hypothesis was formed that because undefended accused were expected to be relatively less credible than complainants, their testimonies would contain higher relative percentages of high level problems and lower

relative percentages of low level problems. Statistical support was *not* provided for the relationship between court role and comprehensibility (credibility). Therefore, this hypothesis was not supported. Accuseds' testimonies did contain significantly higher relative percentages of high level expectation conflicts. This may be used to infer that common users/magistrates found accuseds' testimonies to be less comprehensible and therefore less credible than complainants'. There are two additional factors that reduce the clarity of this finding:

First, no significant relationship was demonstrated between the different types of encoding problems and magistrates' credibility judgements. The deduction was that high level problems did not cause a significantly greater lowering of magistrates' perceptions of credibility than low level problems. However, given the procedural problems that have been discussed (see p 178) this finding may be erroneous. Second, there were higher mean percentages of non-categorized problems in 'white' accuseds' and 'coloured' complainants' testimonies. Had these problems been classified, significant differences in the relative percentage of each of the types of encoding problems may have resulted. Therefore, more conclusive statements await further research.

11.3. Limitations of the study

- The unavoidable confounding of socio-economic class and ethnicity is the major limitation to the internal validity of the findings. Had the witnesses been matched according to their socio-economic status the common users' comprehensibility ratings may have differed. However, whether social groups differ according to social class and/or ethnic characteristics, as long as receivers belong to a social

group that differs from that of senders, comprehension difficulties are likely to remain. In court, witnesses and magistrates are not always matched according to their socio-economic class and ethnicity. Thus, differences in magistrates' perceptions of well-formedness, comprehensibility and credibility, may serve to disadvantage certain social groups relative to others. The restricted sample of inter-racial cases prevented further statistical tests of the disadvantaging effects of ethnic identity.

- Significant differences in the common users' perceptions of the comprehensibility of credible and incredible, and 'coloureds' and 'whites' testimonies, were demonstrated. However, *the associations* between credibility and comprehensibility, and ethnicity and comprehensibility were *not measured*. The *predictive efficacy* of the comprehensibility factor must be evaluated in comparison with other non-linguistic and para-linguistic variables.
- There was a failure to develop a weighting system for the encoding problems, in particular one that reflected critical causal chain-effects. This prevented an adequate examination of the differential relationships between the eight types of encoding problems and credibility, ethnicity and court role.
- This study was not an adequate examination of justice delivered in accusatorial criminal trials, because the procedure and confounding order-effects may have obscured the effects of prosecutors' questioning on comprehensibility (credibility, ethnicity and court role).
- Three explanations have been provided for the relationship between

ethnicity and comprehensibility (credibility). This study did not facilitate a conclusion as to the most applicable. To reach conclusions, future investigations must examine the interrelations between source and message credibility factors in court.

- Finally, the criticism may be levelled that these findings are generated in an extra-court context and may not be directly generalized to predicting intra-court processes (Lloyd-Bostock, 1981). However, it has been argued that the differences between common users and magistrates are expected to increase the influence of the comprehensibility factor on magistrates' credibility assessments in court.

The assessment of whether the processes postulated in this study do operate *in* criminal trials must remain the province of future investigations ie, the external validity has yet to be tested.

11.4. Future research

Future investigations should attempt to overcome the limitations of this study that are mentioned above. This study has raised the issue that it is receivers' perceptions of the efficacy of speakers' language performance that may be fundamental to people's 'success' in the South African legal system. However, legal proceedings comprise only a small proportion of legal activities (Atkinson and Drew, 1979). Therefore, future studies should examine the effects of differences in language performance *throughout* the legal process. Disadvantaging may be accumulative in nature (Lizotte, 1978).

The second major issue to be explored systematically is the role played

by prosecutors' questioning in creating and emphasizing schematic violations that may decrease undefended, 'non-white' accuseds' credibility. The investigation of this process would serve as a more adequate test of justice administered in the South African accusatorial system.

It is beyond the scope of this thesis to include suggestions for legal reform that arise from these findings. The reader is referred to the more specific report compiled for the Human Sciences Research Council Juridical Committee (Hansson and Van Zyl Smit, 1984):

The compilation of splendid reports may contribute to scholarship. Unless they are followed up with legislation, and beyond with the scrutiny of the operation of reformed laws, they will not generally improve society.

(Slabbert, 1981: 1)

11.5. Conclusions

This study was the first attempt to explore the role played by the extra-legal variable of the semantic structure of testimony in shaping magistrates' verdicts, in the South African criminal justice system.

In the pilot phase the 'white' common users reported that their credibility judgements were 'determined' by the comprehensibility (the well-formedness of the semantic structure) of testimonies. They maintained that they used 'incomprehensibilities' (schematic violations) as cues of deception in assessing the credibility of testimonies. They showed that these 'incomprehensibilities' were 'caused' by violations of their macro-schematic knowledge and norms of interpretation (encoding problems). Eight types of encoding problems were identified and defined. The findings generated by the experimental phase I common users demonstrated that they perceived the comprehensibility (well-formedness) of testimonies that magistrates

had judged to be incredible, to be lower than that of testimonies that magistrates had judged to be credible. Additionally, the findings showed that the 'white' experimental phase I common users perceived 'coloured' witnesses' testimonies to be less 'comprehensible' (less well-formed) than those presented by 'white' witnesses.

This study was conducted out of court. Therefore, the extrapolation of the findings to predict in-court processes is fraught with criticism. However, it has been argued that the differences between 'white' magistrates and 'white' common users that could produce different effects in court; may actually be expected to increase the effects of the comprehensibility (well-formed) of testimony on magistrates' credibility judgements and verdicts. Therefore, magistrates' are expected to perceive 'coloured' witnesses' testimonies as relatively less comprehensible (less well-formed) and therefore less credible than 'white' witnesses. This process could disadvantage 'coloured' witnesses relative to 'white' witnesses in interracial cases. This is deductive and theoretical support for the disadvantaging of 'coloured' witnesses in South African magistrates' court cases.

Due to procedural and design factors, the study did not facilitate an adequate examination of disadvantaging caused by accusitorial proceedings, the relative importance of the comprehensibility of the PIS's and CES's of testimonies in shaping magistrates' credibility judgements; and the relative 'contributions' of each of the eight types of encoding problems to incomprehensibility and to magistrates' assessments of credibility. Future research into these processes has already been planned.

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APPENDIX I

PRIMITIVE ACTIONS AND THEIR CORRESPONDING ACTION ELEMENTS

Names of the primitive actions	Action elements defining the acts	Examples of linguistic cues that instantiate the primitive action conceptualizations in the English language
Atrans	The possession, ownership ie, control of some object.	give, take, buy
Ptrans	Transfer of physical location.	go, put, come,
Propel	The application of physical force to an object.	push, pull, throw, kick, break
Move	The movement of a body part of an animate object by that animate object.	kiss, scratch, walk
Grasp	The grasping of an object by an actor.	hold, let go of, grab, throw
Ingest	The taking of an object to the inside of an animate object.	smoke, eat, drink, breathe
Expel	The expulsion of an object from the body of an animate object into the physical world.	sweat, spit, cry
Mtrans	The transfer of mental information between animate objects and/or within an animate object.	tell, see, remember, forget, learn
Mbuild	The construction of new from old information by an animate object.	decide, conclude, imagine, consider

Names of the primitive actions	Action elements defining the acts	Examples of linguistic cues that instantiate the primitive action conceptualizations in the English language
Speak	The production of sound by an animate object.	play music, speak, purr, scream
Attend	The focusing of attention of some sense organ of an animate object toward a stimulus.	listen, see, smell

(Schank and Abelson, 1977: 12/13)

APPENDIX II

CAUSAL SYNTAX RULES

Rules	The notation used to represent each rule:
C.S.1. - Action can result in state changes.	$\begin{array}{c} \text{Act} \\ \downarrow r \\ \text{State} \end{array}$
C.S.2. - States can enable actions.	$\begin{array}{c} \text{State} \\ \downarrow E \\ \text{Act} \end{array}$
C.S.3. - States can disable actions.	$\begin{array}{c} \text{State} \\ \downarrow dE \\ \text{Act} \end{array}$
C.S.4. - States or actions can initiate mental states.	$\begin{array}{ccc} \text{State} & & \text{Act} \\ \downarrow I & \text{or} & \downarrow I \\ \text{Mental State} & & \text{Mental State} \end{array}$
C.S.5. - Mental states can be reasons for actions	$\begin{array}{c} \text{Mental State} \\ \downarrow R \\ \text{Act} \end{array}$

(Schank and Abelson, 1977)

APPENDIX IIIa

AN EXCERPT FROM A COMPLAINANT'S TESTIMONY

1. C was on his way home.
2. C had his radio with him.
3. C had it under his jacket.
4. C went up the alleyway.
5. A ducked out into the alleyway.
6. A asked C if the radio could play.
7. C told A that it was broken.
8. A said that if C did not give him the radio,
9. A would stab C.
10. B came up to A and C.
11. B hit C twice.
12. A took C's radio from C.

KEY:

In this example the discourse cues are not represented at the scriptal level ie, level three.

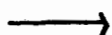
10 - The discourse cue(s) from which the memory representation was derived.

A, B - The two accused who filled the role theme of robber.

C - The complainant who filled the role theme of victim.



- Signifies the direction of occurrence.



- Signifies interrelationships among knowledge represented at each level in the hierarchy.

THE DERIVED HIERARCHICAL MEMORY REPRESENTATION

APPENDIX IIIB

Level 4 - Thematic Schema

A & B possess C's radio

A-goal

(See Appendix VI)

Highest level state change

2.3
C has C's radio

12
ATRANS (of C's radio from C to A and B)

12
A and B have C's radio

Level 3 - Intentional Schema

D-PROX (A, B and C)

D-AGENCY (of C)

D-CONT (C's radio)

D-goals

(See Appendix VII)

ASK (A to C)

THREATEN (A to C)

OVERPOWER (B to C)

STEAL (A from C)

Plan-boxes

Level 1 - Causal Chain Schema

1.4.5.10
A & B PTRANS to C

6
A MTRANS A wants C's radio to C

7
C MTRANS a refusal to A

8.9
A MTRANS A will stab C, to C

11
B PROPEL B's hand, to C

12
A GRASP C's radio, from C

Primitive Acts (See Appendix I)

APPENDIX IV

SCRIPT HEADERS

1. Precondition Headers (P.H.) : are linguistic cues that present the central precondition or the goal to be achieved by a scripted activity. P.H.'s generally take the form of an inferred goal eg, the linguistic cue of John was hungry, may act as a P.H. for the § Restaurant.
2. Instrumental Headers (I.H.) : are linguistic cues that function as script headers for a particular fleeting script and thence as a script header to a second non-fleeting script. The first fleeting script operates as the instrument by which the Maincon of scene I of the non-fleeting script is achieved eg, consider the linguistic cue of; (i) John took a taxi, (ii) to the restaurant. Segment (i) of the cue is the script header for the § Taxi Ride and would thus instantiate this script temporarily. (i) and (ii) serve as the Maincon of scene I of the § Restaurant ie, the Maincon of PTRANS of a customer to the location of the restaurant. Thus, the temporary activation of the first § Taxi Ride, is instrumental in instantiating the more permanent use of the § Restaurant.
3. Locale Headers (L.H.) : are linguistic cues that refer to peoples' presence in places where scripted activities generally take place eg, the linguistic cues of, John was at the art gallery, would act as a L.H. that activates the § Art Gallery Visit.

4. Internal Conceptualization Headers (I.C.H.) : are linguistic cues that refer to one of the roles or **props** in a script eg, the linguistic cue of, the *waiter* arrived at the *table*, would operate as a I.C.H. thus activating the \$ Restaurant.

It should be noted that the accuracy of the script predictions facilitated by these four script headers increases progressively from number one to four.

(Schank and Abelson, 1977)

APPENDIX V

GENERAL RULES FOR PLANS AND GOALS

1. Since the actions constituting a plan have preconditions and consequences, if the preconditions of an action are absent a subgoal must be established to create them.
2. If the preconditions of a planned action are created, *that* action will be performed to satisfy the goal. This goal may be the central goal, or it may be a subgoal that is another precondition for the attainment of a higher-order goal.
3. If the preconditions of a planned action *cannot* be created, then that planned action will be *dropped* from the plan. Another planned action to achieve the desired goal will then be substituted.
4. Should any plan involve a very large number of subgoals, then that plan will be dropped as it will be an inefficient means of attaining the desired goal ie, it will be too costly and/or too time consuming.
5. If any goal can be achieved by means of a number of different plans, the least time consuming and costly plan will be followed.

(Black and Bower, 1980)

APPENDIX VI

MAIN GOALS AND PLANS

A definition of each maingol	Examples	The constituents of the main plans for each maingol
<hr/>		
1. <u>Satisfaction Goals</u> (S-Goals)		
These are goals to achieve the satisfaction of strong, biological needs in order to maintain life. The goals are cyclical in nature.	To sleep, to be fed and to have sex etc.	Involves the use of some object/person which requires the user to know the whereabouts of the object; to be in close proximity to the object; to have 'control' of the object; and to prepare the object in some manner to make it ready for use, as is desired.
2. <u>Enjoyment Goals</u> (E-Goals)		
These are goals to participate in activities that are pursued voluntarily for enjoyment and/or relaxation.	To travel, to be entertained, to exercise, to compete.	Involves the gaining of some experience which requires the gainer to know the location of the source of the experience, to be in the location, and to gain social control of the right to the reception of that experience.
3. <u>Achievement Goals</u> (A-Goals)		
These are goals to achieve long-term valued acquisitions and/or social positions.	To possess, to gain powerful positions, to acquire a skill.	Involves the gathering of resources, dealing with appropriate people, developing appropriate behaviours and passing critical tests.

A definition of each maingoal	Examples	The constituents of the main plans for each maingoal
<p>4. <u>Preservation Goals (P-Goals)</u></p> <p>These are goals aimed at preserving and/or improving one's health, safety, position, property and/or well being.</p>	<p>To have an operation, to go on a diet, to fight off a burgler.</p>	<p>Involves the formation of a plan to counter that which threatens.</p>

(Schank and Abelson, 1977)

APPENDIX VII

PERSUADE PLANBOXES

1. ASK

ACT P MTRANS (NEW?) to T

CP Those for MTRANS (in a simple world, PROX (P,T))

UP Those for DO. (For example, if DO is T ATRANS X to P,* then the preconditions are T CONT (X), PROX (T,X), and PROX (T,P))

MP T want to DO

RES T DO, causing NEW

2. INVOKE THEME

ACTs a P MTRANS (NEW?) to T
b P MTRANS (THEME (P,T)) to T

CPs a Those for MTRANS (PROX (P,T))
b Theme (P,T) is true
note: The second precondition is controllable only if we recognize further plans which can result in theme changes such as a change in T's liking for P. Otherwise this precondition is uncontrollable.

UPs Those for DO*

MP THEME (P,T) would cause DO

RES T DO, causing NEW

3. INFORM REASON

ACT P MTRANS (T not DO would cause NEGATIVE STATE for P; or T DO would cause POSITIVE STATE for T) to T (in other words, P tells T that P will suffer in some way if T does not do what P asks, or that T will feel good by doing it.)

CPs a those for MTRANS (PROX (P,T))
b T believes the NEGATIVE (POSITIVE) STATE is potentially true. (This second precondition says that P's story is credible to T. This is controllable only up to a point.)

UP those for DO*

MP Potential NEGATIVE (POSITIVE) STATE would cause Do.

RES T DO, causing NEW

4. BARGAIN OBJECT

ACT P MTRANS (T DO would cause P ATRANS OBJECT to T) to T

CPs a Those for MTRANS (PROX (P,T))
b Those for P ATRANS OBJECT to T
(in particular, T POSS OBJECT)

UP Those for DO*

MP T want OBJECT

RES a T DO, causing NEW
b P ATRANS OBJECT to T, causing T POSS OBJECT
(Note: There is a trick (TR) option available for BARGAIN OBJECT, in which the persuader does not deliver the OBJECT he promised. In its choice and effect, BARGAIN OBJECT (TR) thus is similar to STEAL, but in its execution is similar to BARGAIN OBJECT.

5. BARGAIN FAVOR

ACT P MTRANS (T DO would cause P DO (+)) to T
DO (+) abbreviates 'do an ACT intended to lead to a POSITIVE STATE'; DO (-) abbreviates 'do an ACT intended to lead to a NEGATIVE STATE'.

CP a those for MTRANS (PROX (P,T))
b those for DO (+)

UP those for DO*

MP DO (+) would case DO
Note that BARGAIN FAVOR has a trick option, too, in which P does not carry out the favor, DO(+)

RES a T DO, causing NEW
b P DO (+)

6. THREATEN

ACT P MTRANS (T not DO would cause P DO (-)) to T

CP a those for MTRANS (PROX (P,T))
b those for DO (-)

UP those for DO*

MP DO (-) would cause DO
(That is, the threatened behaviour is sufficiently feared by T to initiate DO)

RES a T DO, causing NEW
b P not DO (-)
(Unlike other planboxes, THREATEN has a result attaching to failure as well as to success, namely that if T does not DO what was asked, P will carry out his treat. But there is a trick option here, too - 'bluffing', wherein P knows that he does not have the wherewithal to carry out the threat.)

7. OVERPOWER

ACT P PROPEL (object or part of body) to T (causing T to DO)

CP a those for PROPEL (close PROX (P,T))
b P has means to OVERPOWER T

UP Those for DO*

MP PROPEL (P to T) would cause DO

RES T DO, causing NEW

8. STEAL

ACT P GRASP (object) from T

CP a those for GRASP (T has object)
b PROX (P,T)

UP Those for DO*

MP GRASP (object) would cause DO

RES P DO, causing NEW

KEY

- ACT: is the primitive action that must be accomplished for the plan to be successful.
- CPs: are the controllable preconditions that must be present for the primitive act to be accomplished. If these are not present then a D-Goal must be established to create the missing preconditions.
- UPs: are the uncontrollable preconditions that must be present for the primitive act to be accomplished. If these are not present then the D-Goal must be dropped and replaced with another. This is due to the fact that the U.P. cannot be created by utilizing other planboxes for that D-Goal.
- MPs: are the mediating preconditions that must be present for the primitive act to be accomplished. If these are not present then the planbox must be dropped and another planbox must be used that will accomplish the D-Goal.
- RES: This is the outcome of the successful use of a planbox in accomplishing a D-Goal.
- NEW: refers to the new state that is desired by the planner.
- OLD: refers to the old state that the planner wishes to change.
- DO: refers to the primitive act which must be performed to consummate the successful achievement of the D-Goal.

(Schank and Abelson, 1977: 95-97)

APPENDIX VIII

EXPECTANCY RULES

- ER1 If a person's state becomes NEGATIVE on either the PHYSICAL or EMOTIONAL scale, then that person will do one or any number of a set of actions to improve the NEGATIVE state. eg, John is going to take some aspirin for his cold.
- ER2 If a person believes that an action will cause that person's state to NOT go to a particular NEGATIVE value on the PHYSICAL, MENTAL and/or EMOTIONAL scales and that person believes that his state MAY go to that value if an action is not performed, then that person will do that action. eg, When he saw the grizzly bear, John climbed up the nearest tree.
- ER3 If a person does an action which causes a negative change in another person's state on any level, then the second person may do another to cause a negative change in the first person's state. This is simply revenge.
- ER4 If one person does an action which causes a positive change in another's state on some level then that person may do another action to cause a positive change in the first person. This is mutual back-scratching or flattery.
- ER5 If a person believes that an action will cause another person's physical state not to go to a particular NEGATIVE PHYSICAL STATE that is otherwise imminent if that action is not performed; and the two people are positively emotionally related, then the first person will do something to get that action performed. eg, Joey's mother demanded that he get flu shots.
- ER6 If two people are positively emotionally related, then a negative change in one person's state will cause the other person to develop the goal of causing a positive change in the other's state. eg, When Mary cried over the loss of her ring, John sent her flowers.
- ER7 If two people are positively emotionally related then the recognition of a potential negative change in one person's state will cause the other to develop the goal of preventing the negative change in the first person's state. eg, When the Little League coach said he might bench John's son, John tried to get the coach fired.
- ER8 If a person is in a positive emotional relationship to another person then if he can help the other person by assuming the responsibility of achieving a goal of the other person, he will.

APPENDIX IX

CONTENTS OF ROLE THEMES

1. A role-member and one or more role-goals.
2. A set of conditions that trigger the goals.
3. A list of risks and benefits resulting from the actions performed within the role.
4. A set of plans to realize role-goals.
5. A set of behaviours that may be expected from characters relating to a role member.
6. A set of situational scripts that integrate the behaviours of role-members and the behaviours of others.
7. A set of deviations from the expected behaviours.
8. A set of conditions for entering and ~~exiting~~ exiting from the role.

(Schank and Abelson, 1977)

APPENDIX K

PROCEDURAL GUIDELINES FOR THE PILOT PHASE COMMON USERS' ANALYSIS

The aim of the analysis

The aim of this phase of the study is to understand *what it is* about these court testimonies that makes you find them more or less credible or not credible.

You have been provided with a number of sets of dialogue that constitute a court case. Each set of dialogue is termed a court testimony. Each court case consists of a case for the prosecution and a case for the defence. The case for the prosecution will always contain a testimony delivered by the complainant and in some instances one or more testimonies delivered by witness(es) for the prosecution. The case for the defence will always contain a testimony delivered by the accused and in some instances one or more testimonies delivered by witness(es) for the defence.

The procedure to be followed

1. Read the entire court case *carefully*.
2. Read the case for the prosecution *carefully*.
3. Read the case for the defence *carefully*.
4. Then note down which of these two is *most credible to you* and which is *least credible to you*. You must choose. You cannot say that you find both to be equally as incredible or credible.
5. Then take the case for the prosecution and write down in as much detail as possible *your reasons* for finding it more or less credible. You are free to note *any aspect* of the case that you found influenced your assessment of its credibility.

6. Then take the case for the defence and do the same.
7. Bring all this information to the final meeting, as well as any problems that you may have experienced or any comments you would like to make. Please contact me if you have any problems.

Thank you

APPENDIX XIa

AN EXCERPT FROM A CASE DIALOGUE

C you are the owner of the Red Dot Clothing Company, in Fifth Avenue, Kenilworth, is that correct?

That is correct.

On the 20th of January 1981 you left the premises, is that correct?

That is correct.

More or less at four o'clock in the afternoon?

At four in the afternoon.

Now, can you tell the court in what condition you left the premises?

I locked the premises and I set the alarm.

You set the alarm?

Yes

Do you mean that you locked all the doors and windows?

I locked all the doors, I locked all the windows, I do it every night before I leave the factory.

APPENDIX XIb

THE DERIVED STORY ELEMENT LIST

1. C is the owner,
2. Of the Red Dot Clothing Company,
3. In Fifth Avenue, Kenilworth.
4. On the 20th of January 1981,
5. C left the premises.
6. At four in the afternoon.
7. C locked the premises,
8. And C set the alarm.
C set the alarm. (rep 8).
9. C locked all the doors,
10. C locked all the windows,
11. C does it every night,
12. Before C leaves the factory.

KEY

(rep 8) = story elements that were repetitions of earlier story elements. These were not numbered separately because the common users required only one number to denote each different story element.

APPENDIX XIIa

THE PERCENTAGES OF SAMPLE CASES HEARD BY EACH MAGISTRATE

Magistrate Codes	Credible 'whites'	Incredible 'whites'	Credible 'coloureds'	Incredible 'coloureds'
1	-	6.3	6.3	-
2	-	6.3	6.3	-
3	-	18.7	18.7	-
4	18.7	12.5	12.5	18.7
5	18.7	-	-	18.7
6	12.5	37.5	37.5	12.5
7	12.5	6.3	6.3	12.5
8	6.3	-	-	6.3
9	-	6.3	6.3	-
10	-	6.3	6.3	-
11	12.5	-	-	12.5
12	6.3	-	-	6.3
13	6.3	-	-	6.3
14	6.3	-	-	6.3
Number of different magistrates	9	8	8	9

APPENDIX XIIB

THE PERCENTAGES OF SAMPLE CASES INVOLVING EACH PROSECUTOR

Prosecutor codes	Credible 'whites'	Incredible 'whites'	Credible 'coloureds'	Incredible 'coloureds'
A	-	-	6.3	6.3
B	-	-	6.3	6.3
C	-	-	12.5	12.5
D	-	-	12.5	12.5
E	25	18.7	-	-
F	18.7	18.7	25	25
G	-	6.3	12.5	-
H	12.5	6.3	-	-
I	6.3	6.3	6.3	6.3
J	-	6.3	6.3	-
K	6.3	6.3	-	-
L	-	-	6.3	6.3
M	-	-	6.3	6.3
N	6.3	-	-	6.3
O	-	-	-	-
P	6.3	-	-	6.3
Q	6.3	6.3	-	-
R	6.3	6.3	-	-
S	6.3	6.3	-	-
T	6.3	6.3	-	-
Number of different prosecutors	11	11	10	10

APPENDIX XIIc

THE PERCENTAGES OF SAMPLE CASES INVOLVING EACH OFFENCE

Offence Type	Credible 'whites'	Incredible 'whites'	Credible 'coloureds'	Incredible 'coloureds'
Robbery	-	-	*38.8	*38.8
Assault G.B.H.	-	-	11.1	11.1
Theft	11.1	11.1	11.1	11.1
Crimen Injuria	11.1	11.1	5.6	5.6
Malicious Damage to Private Property	5.6	5.6	-	11.1
Common Assault	5.6	5.6	-	-
Trespassing on private property	5.6	5.6	-	-
Attempted House-breaking	-	-	5.6	5.6
House-breaking with intent to steal	-	-	5.6	5.6
House-breaking	5.6	5.6	11.1	-
Attempted Robbery	5.6	5.6	-	-
Fraud	5.6	5.6	-	-

Offence type	Credible 'whites'	Incredible 'whites'	Credible 'coloureds'	Incredible 'coloureds'
Disobeying red robot	5.6	5.6	-	-
Bilking	5.6	5.6	-	-
Making a False Statement	11.1	11.1	-	-
Possession of Mandrax	5.6	5.6	-	-
Escaping Custody	5.6	5.6	-	-
Number of different offence types	13	13	7	7

APPENDIX XIIId

THE PERCENTAGE OF ENGLISH AND AFRIKAANS TESTIMONIES IN THE EXPERIMENTAL
SAMPLE

	Afrikaans	English
Credible	66%	34%
Incredible	66%	34%
'Coloureds'	100%	0%
'Whites'	31%	69%

APPENDIX XIe

INTERRACIAL SAMPLE : NUMBER OF TESTIMONIES

	<u>Credible 'whites'</u>		<u>Totals</u>	<u>Credible 'coloureds'</u>		<u>Totals</u>	<u>Row Totals</u>
	<u>Accused</u>	<u>Complainants</u>		<u>Accused</u>	<u>Complainants</u>		
<u>Intra-racial</u>	6	7	13	6	7	13	26
<u>Interracial</u>	2	1	3	2	1	3	6
<u>Totals</u>	8	8	16	8	8	16	32

	Incredible 'whites'		Totals	Incredible 'coloureds'		Totals	Row Totals
	Accused	Complainants		Accused	Complainants		
Intra-racial	7	6	13	7	6	13	26
Interracial	1	2	3	1	2	3	6
Totals	8	8	16	8	8	16	32

APPENDIX XIIIa

PROCEDURAL GUIDELINES FOR PHASE I

The aim of this analysis

The aim of this phase of the investigation is for you to identify *all* the parts of each of the testimonies, that you experience as being *incomprehensible/difficult/problematic to understand*.

You have been provided with a number of sets of court dialogue that constitute a court case. Each set of dialogue is termed a court testimony. Each court case consists of at least two testimonies: One delivered by the complainant and one delivered by the accused. In some cases there will also be one or more testimonies delivered by witness(es) for the prosecution and/or for the defence.

The procedure to be followed

1. Read the *first* testimony in the court case *carefully*.
This will always be the complainants' testimony.
2. Read the corresponding *story element list* marked with the same case code in the top left hand corner of the sheet.
3. Make a note of *the numbers* of *all* the story elements that you find to be *incomprehensible/problematic/difficult to understand*. You may find that it is easier for you to mark parts of the original dialogues that you find problematic, *first*. Then go to the story element list and find the corresponding story element(s).
4. Then, provide a *detailed reason* as to why you found each of the story elements to be problematic to understand. Often it is useful when providing a reason, to think of how you would *correct* the testimony in order to make it easier to understand/comprehend.

5. Repeat this procedure from 1 to 5, for *each* of the testimonies in the case.
6. You must carry out this part of the procedure for each of the testimonies, *in the order in which they occur* in the court case ie, the complainants' testimony first, then the witness(es) for the prosecution, then the accuseds' testimony, and finally any witness(es) for the defence. However, you must assess each testimony *independently* of the other testimonies.
7. Please use a separate sheet of paper for each analysis of each testimony. Write the correct case code in the top left hand corner of each page that you write on.
8. Place all the sheets that you use and the original information that you were provided with, in the green envelope and return it to me.
9. If you have any problems and/or questions and/or comments do not hesitate to contact me.

THANK YOU.

APPENDIX XIIIb

AN EXAMPLE OF AN ANALYSIS SHEET

The number of the
problematic story
elements:

The reasons why these story elements
were problematic

23 and 24

Where did C's child come out from?
No information is provided here to
explain this statement and therefore
it does not make sense.

15/16/31/32

with

56/57

If C supposedly asked A to come inside
the house and talk *with C* then why was
it necessary for C to go and wake C's
husband up to come and talk with A?
One does not expect this to happen and
no reason is given for this apparent
change of plan.

APPENDIX XIVa

PROCEDURAL GUIDELINES FOR PHASE II

The aim of this analysis

The aim of this phase of the study is for you to **classify** each one of a set of reasons into one of nine possible encoding problem categories.

You have been provided with a set of numbered reasons and a set of nine defined encoding problem categories. Each of these reasons was furnished by a previous group of people as a justification for finding certain parts of court testimonies to be problematic to comprehend. The numbers in the first column on the left hand side of the pages are the numbers of the story elements that were identified as constituting a problem within testimonies. Should the numbers be written with a dash (-) separating them, this indicates that these story elements were perceived as conflicting or opposing elements of information. The slashes (/ 's) between the numbers have merely been used to separate the numbers.

The procedure to be followed

1. Read through each of the nine encoding problem category definitions *carefully*.
2. Read through each of the reasons *separately* ie, each reason should be read in *complete isolation* and should not be integrated with any of the other reasons.
3. Then match each reason against the nine encoding problem category definitions. Write down the name of the encoding problem category into which each reason fits in the fourth right hand column of each sheet. You may only place each reason into a single category.

4. Should you feel that any reason does not fit into any one of the first eight categories, you may place it in category nine, which is an open category. However, *do not* use this category unless you are certain that the reason does not fit into any of the first eight categories.
5. You are *not* required to judge whether or not *you* agree with the reasoning provided or whether in fact it does constitute a comprehension problem. You are only required to categorize the reasons in the form that these have been presented.
6. If you have any problems, questions or comments do not hesitate to contact me.

THANK YOU

APPENDIX XIVb

AN EXAMPLE OF A PHASE II ANALYSIS SHEET

Problematic element numbers	Reasoning	Encoding problem category
28	1. C is saying that B asked A "Were you with?" However, C does not state who A was supposed to have been with.	Ambiguous wording problem.
30/31/61	2. The reason why B suddenly hit C with a fanbelt is not provided.	Justification missing problem.
17 - 33/35	3. C claims that A could see that C's radio-tape was broken. However, C was carrying the radio tape under C's arm and under C's jacket, so how was it possible for A to have seen that the radio-tape was broken?	Empirical contradiction problem.
16 - 33/35	4. C claims that A just 'popped up' in the empty alleyway and immediately asked C if C's radio-tape could play. However, seeing that C had the radio-tape under C's jacket, how could A have known that C was carrying a radio-tape in the first place?	Empirical contradiction problem.
39	5. C claims that B hit C "at the same time", but C does not say at the same time as what.	Ambiguous wording problem

APPENDIX XVa

PERCENTAGES OF INCOMPREHENSIBILITY

SS	A B C	D.V. 1	D.V. 2a	D.V. 2b	D.V. 2c
1	000	8.7	7.4	0.0	7.4
2	101	8.2	8.2	0.0	11.0
3	100	58.4	58.4	66.7	49.2
4	001	35.5	32.3	39.6	51.3
5	100	9.0	9.9	0.0	10.9
6	001	23.2	23.2	21.4	29.0
7	010	15.2	10.5	42.9	7.2
8	111	29.7	29.7	24.8	41.1
9	000	3.0	3.0	0.0	3.0
10	101	13.7	13.7	13.6	13.9
11	110	40.8	48.6	55.0	47.2
12	011	21.8	21.8	15.8	32.6
13	100	18.8	20.5	0.0	20.5
14	001	10.8	10.8	21.8	2.2
15	000	20.9	20.9	11.6	23.5
16	111	23.9	23.9	26.2	19.4
17	110	26.6	26.6	7.7	39.5
18	011	11.1	11.1	0.0	14.0
19	110	58.4	58.4	66.7	49.2
20	001	35.5	32.3	39.6	51.3
21	010	5.3	5.3	4.0	6.0
22	111	39.0	37.7	33.3	50.0
23	010	15.2	10.5	42.9	7.2
24	101	29.7	29.7	24.8	41.1
25	100	14.6	16.9	3.4	19.7
26	001	5.7	5.7	0.0	10.3
27	110	37.9	37.9	100.0	32.1
28	011	12.3	12.3	0.0	21.2
29	110	27.4	32.4	28.6	34.8
30	001	6.0	6.0	5.2	7.0

SS	A B C	D.V. 1	D.V. 2a	D.V. 2b	D.V. 2c
31	010	11.6	11.6	0.0	12.2
32	111	26.8	26.8	19.4	66.7
33	010	19.9	20.6	16.7	23.9
34	111	32.2	32.2	25.7	45.6
35	010	5.3	5.3	4.0	6.0
36	111	32.6	39.1	36.7	45.2
37	000	34.2	34.2	66.7	24.1
38	101	28.3	28.3	30.6	23.5
39	110	27.8	24.6	18.8	31.7
40	011	9.3	12.0	6.3	10.2
41	000	0.0	0.0	0.0	0.0
42	101	8.4	8.4	6.7	22.4
43	100	30.7	30.7	14.7	42.1
44	011	9.8	9.8	6.5	12.7
45	000	8.3	8.3	0.0	8.3
46	101	19.0	19.0	26.7	8.8
47	100	0.0	0.0	0.0	0.0
48	001	4.7	3.7	3.4	5.3
49	010	16.0	21.5	10.9	29.1
50	111	9.9	9.9	7.9	19.2
51	000	2.2	2.2	0.0	2.2
52	101	2.4	2.4	2.4	2.8
53	000	8.2	8.2	22.2	6.6
54	101	35.1	35.1	66.7	25.0
55	100	32.5	33.3	100.0	25.6
56	011	13.1	13.7	12.8	17.1
57	100	35.7	35.7	22.2	39.4
58	001	14.7	14.7	0.0	18.0
59	110	31.6	31.6	60.0	30.0
60	011	34.1	34.1	21.4	57.1
61	010	25.6	25.6	4.3	32.8
62	111	70.8	70.8	78.6	60.0
63	110	27.7	30.1	20.8	33.3
64	011	20.2	20.2	24.3	0.0

APPENDIX XVb

RELATIVE PERCENTAGES OF ENCODING PROBLEMS

SS	A B C	D.V. 3a	D.V. 3b	D.V. 3c	D.V. 3d	D.V. 3e	D.V. 3f	D.V. 3g	D.V. 3h	D.V. 3j
1	000	000	000	000	000	50.0	50.0	000	000	000
2	000	000	000	000	33.3	33.3	000	000	33.3	000
3	100	5.1	12.8	43.6	7.7	10.3	2.6	5.1	000	12.8
4	001	000	5.9	29.4	11.8	35.3	5.9	5.9	5.9	000
5	100	000	33.4	22.2	000	11.1	22.2	11.1	000	000
6	001	5.5	27.8	16.7	5.5	000	27.8	16.7	000	000
7	010	000	000	25.0	000	25.0	50.0	000	000	000
8	111	000	14.8	29.6	11.1	18.5	11.1	7.4	000	7.4
9	000	000	000	000	000	000	100	000	000	000
10	101	000	000	25.0	000	50.0	000	25.0	000	000
11	110	9.5	19.0	23.8	14.3	14.3	4.8	000	000	14.3
12	011	000	20.0	30.0	10.0	20.0	10.0	10.0	000	000
13	100	000	38.5	15.4	15.4	7.7	15.4	000	000	7.7
14	001	000	000	41.7	000	25.0	8.3	8.3	8.3	8.3
15	000	000	45.5	18.2	000	9.1	9.1	9.1	9.1	000
16	111	5.9	23.5	23.5	5.9	11.8	17.6	11.8	000	000
17	110	6.7	33.3	6.7	20.0	000	13.3	13.3	6.7	000
18	011	000	000	50.0	000	000	000	000	50.0	000
19	110	5.1	12.8	43.6	7.7	10.3	2.6	5.1	000	12.8
20	001	000	5.9	29.4	11.8	35.3	5.9	5.9	5.9	000

SS	A B C	D.V.3a	D.V.3b	D.V.3c	D.V.3d	D.V.3e	D.V.3f	D.V.3g	D.V.3h	D.V.3j
21	010	000	000	100	000	000	000	000	000	000
22	111	000	5.0	50.0	5.0	25.0	10.0	000	000	5.0
23	010	000	000	25.0	000	25.0	50.0	000	000	000
24	101	000	14.8	29.6	11.1	18.5	11.1	7.4	000	7.4
25	100	000	45.5	36.4	000	9.1	9.1	000	000	000
26	001	000	000	000	33.3	66.7	000	000	000	000
27	110	7.7	23.1	15.4	000	000	30.7	7.7	7.7	7.7
28	011	000	000	33.3	000	000	000	66.7	000	000
29	110	10.5	31.6	21.1	5.3	000	21.1	000	10.5	000
30	001	000	71.4	000	000	14.3	14.3	000	000	000
31	010	25.0	25.0	25.0	000	25.0	000	000	000	000
32	111	9.1	36.4	9.1	000	9.1	18.2	9.1	9.1	000
33	010	000	8.3	41.7	8.3	25.0	8.3	8.3	000	000
34	111	9.7	6.5	9.7	12.9	29.0	16.1	12.9	3.2	000
35	010	000	000	100	000	000	000	000	000	000
36	111	000	000	68.2	22.7	4.5	000	4.5	000	000
37	000	20.0	000	20.0	000	20.0	000	20.0	000	20.0
38	101	000	16.7	16.7	33.2	16.7	16.7	000	000	000
39	110	000	20.0	40.0	000	20.0	000	10.0	000	10.0
40	011	000	28.6	28.6	000	14.3	14.3	14.3	000	000
41	000	000	000	000	000	000	000	000	000	000
42	101	000	16.7	50.0	16.7	16.7	000	000	000	000
43	100	000	18.8	43.7	6.3	25.0	6.3	000	000	000

SS	A B C	D.V. 3a	D.V. 3b	D.V. 3c	D.V. 3d	D.V. 3e	D.V. 3f	D.V. 3g	D.V. 3h	D.V. 3j
44	011	000	40.0	000	000	60.0	000	000	000	000
45	000	000	50.0	25.0	000	000	000	25.0	000	000
46	101	000	000	000	000	000	25.0	75.0	000	000
47	100	000	000	000	000	000	000	000	000	000
48	001	000	000	50.0	000	000	000	000	50.0	000
49	010	000	36.4	13.6	9.1	13.6	18.2	9.1	000	000
50	111	11.8	41.2	000	5.9	11.8	17.6	11.8	000	000
51	000	000	100	000	000	000	000	000	000	000
52	101	000	000	50.0	000	50.0	000	000	000	000
53	000	000	33.3	000	000	33.3	33.3	000	000	000
54	101	000	000	66.7	000	000	000	000	000	33.3
55	100	10.0	35.0	10.0	15.0	000	5.0	15.0	10.0	000
56	011	000	000	37.5	000	000	25.0	37.5	000	000
57	100	10.0	000	000	000	40.0	40.0	10.0	000	000
58	001	000	000	000	20.0	80.0	000	000	000	000
59	110	000	000	20.0	40.0	000	20.0	000	000	20.0
60	011	000	9.1	36.4	000	36.4	9.1	000	000	9.1
61	010	000	18.2	18.2	36.4	18.2	9.0	000	000	000
62	111	000	5.0	10.0	5.0	50.0	10.0	20.0	000	000
63	110	14.3	21.4	21.4	000	14.3	21.4	000	000	7.2
64	011	000	25.0	50.0	000	000	000	12.5	12.5	000

APPENDIX XVI

A QUALITATIVE ANALYSIS OF A JUDGEMENT

Excerpt from a judgement

The court must say immediately that the complainant made a reasonably good impression on the court. She explained how on the night in question, she had been walking, that the accused came towards her and called to her. She had wine with her, she had food in bags with her and also clothes, which she put down on the ground. Whilst she was standing there, the accused came and grabbed her around the neck and hit her in the eye causing her to fall over, and then he put his hand into the front of her dress and took out R12,00 cash. He then took the other goods that were there and walked away. That was her testimony.

The accused told how he took the money. The money fell onto the ground after he hit the complainant. He could not actually say why he had hit her. He admitted that he took the money for himself. At one stage the accused said that a friend of his and two others were present, but at a later stage he said that there were only three people there ie, himself and two others were present.

No fault can be found with the complainant's testimony, and in fact the accused supports her testimony in part. The accused's story is so implausible that this court cannot accept his testimony. Especially in light of the fact that the complainant explained how the robbery took place so well, and that the accused maintained that he picked up the money and was going to call her back, but that he also wanted the money

for himself. The court cannot accept this. The courts rejects the accused's testimony on the issue of how he got hold of the money. The court believes that he must have taken the money from the complainant as she has described. The court must accept the complainant's testimony.

Magistrate's encoding problems : Critical causal chain violations

1. The accused does not justify why he hit the complainant - justification missing (low level).
2. He admits that he took the money for himself, but is pleading not guilty to the charge of robbery - direct contradiction (low level).
3. He claims that there were four people present and then that there were only three people present - direct contradiction (low level).

Common users' encoding problems : Critical causal chain violations

1. The accused does not explain why he hit the complainant - justification missing (low level).
He claims that he does not know how he shook her and that he shook her with one hand by the shoulder, twice - direct contradiction (low level).
He says that he cannot remember what happened, but that he never pushed her to the ground - direct contradiction (low level).
He maintains that he cannot remember what happened, but that he did not hit her - direct contradiction (low level).
2. The accused says that he took the money and did not give it back, but is pleading not guilty to the charge of robbery - direct contradiction (low level).
He claims that he was going to give her purse back, but that she walked away. This is unexpected since she wanted her purse back. He does

not give a reason for the complainant's unexpected behaviour - expectation conflict (high level).

He says that he had no intention of stealing the money, and then that he did intend to steal it - direct contradiction (low level).

He maintains that he intended to steal the purse, but that he wanted to give it back to the complainant - direct contradiction (low level).

3. The accused maintains that there were four people present when he found the complainant and yet later he says that there were only three people present - direct contradiction (low level).

Common users' encoding problems : Peripheral violations

1. Although the accused found the complainant from whom he wanted to buy wine, he did not buy wine. Instead he went straight to another wine seller. No reason is provided for the accused's change of plans - expectation conflict (high level).
2. The accused states that B had already left, but does not explain where B had left from - ambiguous wording (low level).
3. When the accused arrived back from the wine seller B had already left the complainant, and yet the accused knew where to find B. The accused does not say how he knew where to find B - empirical contradiction (high level).
4. Seeing that the accused had been unsuccessful at finding wine to buy, it seems unusual that he did not ask B where B had managed to get wine from - expectation conflict (high level).
5. The accused said that C was lying under a lorry and then later he says that she was lying a little way away from a lorry- direct contradiction

(low level).

6. The accused says that the complainant was not on the ground and yet he maintains that she was lying on the ground - direct contradiction (low level).

7. The accused says that the complainant's money fell out of the front of her dress and yet he also says that it was her purse that fell out - direct contradiction (low level).

APPENDIX XVII

RAW DATA FOR INTERRACIAL CASES

'White'
complainants
and 'coloured'
accused.

Percentages of incomprehensibility					
PIS		CES		Total	
C W C	I C A	C W C	I C A	C W C	I C A
23.5	19.4	11.8	26.2	20.9	23.9
I W C	C C A	I W C	C C A	I W C	C C A
25.6	17.1	100	12.8	33.3	13.7
42.1	12.7	14.7	6.5	30.7	9.8

19 JUL 1985

'Coloured'
complainants
and 'white'
accused

PIS		CES		Total	
C C C	I W A	C C C	I W A	C C C	I W A
7.2	41.1	42.9	24.8	10.5	29.7
I C C	C W A	I C C	C W A	I C C	C W A
49.2	51.3	66.7	39.6	58.4	32.3
34.8	7.0	28.6	5.2	32.4	6.0