INTERPERSONAL COMMUNICATION SKILLS IN THE TRAUMATIC BRAIN INJURY POPULATION: AN ANALYSIS ACROSS SITUATIONS

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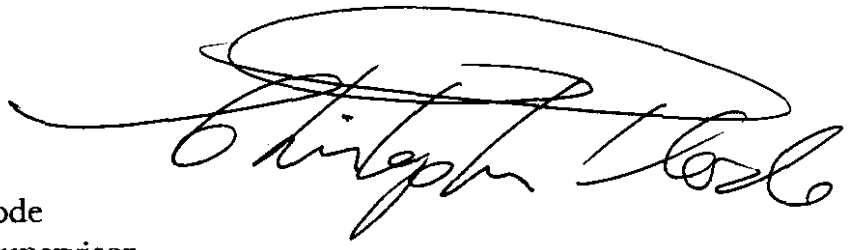
I certify that this Leanne Togher's thesis is ready for submission



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ABSTRACT

This thesis investigates a range of everyday interactions of traumatic brain injury (TBI) subjects when compared with control subjects to examine whether there are differences in the overall structure of interactions, in the way information is exchanged and in the wording which is used. Analyses from systemic functional linguistics including generic structure potential analysis, exchange structure analysis and analysis of politeness markers were used to examine the interactional impairments reported to follow TBI. Results indicated that TBI subjects differed from controls in their use of interpersonal language resources. These differences were exaggerated when subjects were interacting with someone in authority. When placed in a more powerful role, TBI subjects were able to utilise language resources to a similar extent to controls across the three levels of analysis. This thesis has important implications for the assessment and management of interactional communication impairments which may follow TBI, including suggestions for therapy with the person with TBI and for communication partners of people with TBI including therapists, family members and the community.

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None of the work contained within this thesis has been submitted to any other university or institution.

The conduct of this research was approved by The University of Sydney Ethics Committee (Reference numbers: 92/11/3 and 95/12/23).

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Publications, conference proceedings and conference presentations arising from this thesis

Publications

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Togher, L., Hand, L. & Code, C. (1995, May). The use of exchange structure analysis to assess disordered communication in the closed head injury population : a contrastive and supplementary view to Conversational Analysis. Paper presented in the Applications to Conversational Analysis Methodology to Speech Pathology Module. AASH National Conference, Brisbane, Australia.

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Chapter 1

Introduction

Before describing the issues relating to communication skills following traumatic brain injury (TBI) the following discussion aims to introduce the primary issues this thesis will raise. The following example from the data used in the present research is from a telephone interaction between a subject with traumatic brain injury (S1) and a member of the NSW Police Service. S1 is phoning the police to find out how he can get his license reinstated following his brain injury.

P = Policeman S = Subject 1 (S1)

11	⌐	K1↘	S : Actually I've had a bad car accident
12	|	bch	P : Yeah
13	|	K1	S : I need to get my license back (unintell)
14	└	K2f	P : Right yeah.
15	⌐	K2	P : What's your name?
16	|	K1↘	S : R.C.
17	|	cfrq↘	P : R.C. is it?
18	|	rcfrq	S : Yeah
19	└	K2f	P : Right
20	⌐	K2 ↓	S : And if you could tell me if there are any other requirements I've gotta pass in order to get my license back
21	|	bch	P : Right
22	|	K2	S : What I've gotta go through to get it back in other words
23	|	K1	P : Yep. Yep.
24	|	dK1	**P : Do do you know what the Roads and Traffic Authority is?**

25		dK1	**P : The R.T.A. where you go and get your license from**
26		K2	S : Yeah down at Kogarah
27		K1	P : Yeah right
28		K2f	S : Sure
29		K1	P : Um what what what you have to do is if you can um if you have to go to the R.T.A.
30		K1	P : They'll put your application in to get a license
31		bch	S : Sure
32		**check**	**P : Right? If you can understand that**
33		rcheck	S : Yeah
34		K1-Fg	P : But prior to that, um what you have you have to go
35		**check**	**P : ah you know a driving school?**
36		rcheck	S : Yeah
37		K1	P : Right and they um have rehabilitation people that ah can ah put you through oh like your driving lessons,
38		bch	S : Sure
39		K1-Fg	P : and then they decide whether you know
40		cp	S : Whether you're capable
41		rcp	P : Yeah whether you're then capable to go and get your license
42		bch	S : Sure
43		**check**	**P : Right?**
44		K2f	S : OK then

This is an example of a young man with a TBI attempting to find out information which is important to him. Normally a request for information would be met with provision of that information. However, in this case, the policeman turns the request into a series of exchanges where he demands the subject's name, asks for information that the subject already knows (moves 24-

25) and checks whether S1 has understood (moves 32,25,43). Compare for example, S1's normal brother (C1) requesting information from the same policeman:

C = Control subject (C1) P = Policeman

2	K2	C : Um I just had to find out what the procedure is for obtaining a license
3	bch	P : Right
4	K2	C : if its been cancelled due to head injuries
5	check	P : Head injuries was it?
6	clrq	P : How how bad were the injuries mate?
7	rclrq	C : Um well..head injuries
8	bch	P : Right
9	rclrq	C : and its still ..well . he's not better yet and its been four years
10	cfrq	P : Right it's been four years has it?
11	rcfrq	C : Yeah
12	K1	P : Right what has to what has to happen is he has to be ah go through rehabilitation um.. by an approved driving school
13	bch	C : Ah right
14	K1	P : There are certain agencies to go through
15	clrq	C : So they de they determine
16	rclrq	P : Yeah go and speak to a driving school
17	rclrq	P : it doesn't really matter which one
18	K1	P : and just tell them ah you know the problem that you have

Here the information is given after some request for clarification (clrq) but without checking that C1 had understood. These differences reflect a larger

picture of the interactional changes that frequently affect people with TBI. The role of the communication partner in these interactions (i.e., the policeman) has a significant effect on the communication options made available to S1 and C1.

People who have sustained a TBI present with communication impairments that are unique to this diagnosis (Holland, 1982). While some patients experience aphasia following TBI (Heilman, Safran & Geschwind, 1971; Levin, Grossman, Rose & Teasdale, 1979) the more common communication problems are interactional in nature (Hartley, 1995). These interactional impairments have been reported to affect family life (Lezak, 1978), friendships (Elsass & Kinsella, 1987) and vocational competence (Prigatano, 1986; Prigatano, Roueche & Fordyce, 1985). The importance of communication skills to psychosocial adjustment have also been highlighted (Godfrey, Knight, Marsh, Moroney & Bishara, 1989; Marsh & Knight, 1991).

Despite the demonstrated relationship between impaired interactional abilities and psychosocial and vocational outcomes, there has been a paucity of data on how these patients interact with people who are significant in their environment. The majority of studies have investigated this population in interactions with research assistants or speech-language pathologists (e.g., Coelho, Liles & Duffy,

1991; Mentis & Prutting, 1991). Discourse tasks are frequently structured and monologic, such as in story recounts or describing a procedure (e.g. Hartley & Jensen, 1991; McDonald, 1993) and conversational tasks often take the format of open-ended questions from an interviewer (e.g., Linscott, Knight & Godfrey, 1996).

This raises a number of issues which will be addressed in this thesis. A key issue relates to examining the types of interactions people with TBI are studied in, with specific reference to the roles they assume (e.g., patient, son, enquiree, customer) and also the role their communication partner will assume (e.g., therapist, mother, care-giver, authority figure). The communicative roles, including the social distance and power relationships between interlocutors, and the situation will determine the language choices which are made available to both interlocutors. As people with TBI have been most commonly evaluated with a speech-language pathologist or research assistant in a limited range of communicative situations, the description of their discourse impairments currently available is limited to those particular situations. This thesis examines whether changing the communication partner and therefore communicative role results in a changes in communicative behaviour. The communicative behaviours which are measured in this thesis have been chosen from systemic functional

linguistics because they are interpersonal in nature. They focus on three different levels. The first level examines the macrostructure of interactions or the way they unfold, the second analyses the process of information exchange and the third explores the wording that is used. In addition to examining the TBI subjects, the communicative behaviour of the interlocutor has also been described.

Therefore in the example of the TBI subject (S1) and the policeman it is possible to measure how the interaction unfolded, how information was exchanged and the way wording was used to achieve the communicative goal of discussing how a license is reinstated following a TBI. By measuring his brother in a similar interaction, it is possible to compare S1 with his brother at these three levels. Finally, it is also possible to examine whether the policeman's language use changes when he speaks to a person with a brain injury when compared with a normal interlocutor.

Before describing these issues in greater detail it is necessary to review the varied theoretical perspectives which have been used to understand communication following TBI. This is addressed in the following section.

1.1 Communication and traumatic brain injury

1.1.1. Psycholinguistic approaches

Communication disorders following TBI were traditionally investigated using methodologies and assessment tools borrowed from investigations into aphasia (Heilman et al., 1971; Levin et al., 1979). Use of aphasia test batteries failed to delineate the problems which were observed in day to day communication leading to the creation of new definitions such as "subclinical aphasia" (Sarno, 1980) and subsequent debates as to what constitutes aphasic impairment (Holland, 1982). In aphasia the patient has problems which can be described in terms of representational linguistic levels of phonology, morphology, syntax and lexical semantics (Code, 1991). A TBI may well result in aphasic disturbances. Early descriptions of language impairment following TBI indicated that aphasia occurred in 2% of 750 cases and 14% of 50 cases respectively (Heilman et al., 1971; Levin, Grossman & Kelly, 1976). Sarno and colleagues (Sarno, 1980; Sarno & Levita, 1986) indicated that 32% of their TBI subjects evidenced frank aphasia, but they also introduced the new term, "subclinical aphasia". This was defined as "evidence of linguistic processing deficits on testing in the absence of clinical manifestations of clinical impairment" (Sarno, 1980, p.687). The linguistic deficits in the subclinical aphasia group included difficulties with visual naming and word fluency, and reduced scores on the Token Test, when

compared with a matched dysarthric group. These results have been replicated in later studies with specific word finding difficulties on naming and word fluency tasks being the most common finding on tests of traditional language functioning with people with TBI (Adamovich & Henderson, 1984; Levin, Grossman, Sarwar & Meyers, 1981; Lohman, Ziggas & Pierce, 1989).

Difficulty with naming appears to be one of the most reported persisting communication problems following TBI. Thomsen's (1975) study of 50 patients with TBI found persistent oral expression impairment in half the subjects when they were examined on average 33 months post-injury. Groher (1977) assessed a group of 14 TBI patients at monthly periods following resolution of coma. Patients demonstrated intact confrontation naming (on the Porch Index of Communicative Abilities, Porch, 1967) four months after regaining consciousness, however their communication was described as lacking in conversational content. Levin et al. (1976) found in their sample of 50 TBI patients of varying severity that 40% evidenced impaired naming on the Multilingual Aphasia Examination (Benton, 1967). In a five year follow up study of 21 subjects who had been acutely aphasic, Levin et al. found that 12 showed persistent naming impairments.

Naming impairments have been investigated more recently with children with TBI (Jordan, Cannon & Murdoch, 1992; Jordan, Ozanne & Murdoch, 1990) and with adults (Kerr, 1995) using an information processing approach to assessment in the tradition of Coltheart (1987) and Shallice (1986). Kerr (1995) found that one of her six subjects had preserved semantic knowledge, whereas the other five subjects evidenced some central semantic impairment as a major contributing factor in their naming problem, but with concomitant visual and phonological breakdown. The information processing approach to word finding impairments has been applied in treatment (Hillis, 1991) to successfully remediate both semantic and phonological impairments in one TBI patient. The sophistication of this approach, widely used in aphasia therapy in describing the nature of naming impairments, holds some promise for word level analysis with TBI patients. The advantage of a psycholinguistic perspective is the control it allows over the context in which language production occurs. The psycholinguistic approach to language assessment following TBI or cerebrovascular accident does not, however, take socially mediated aspects of language functioning into account.

1.1.2 Cognition and language in TBI

Sarno's term "subclinical aphasia" precipitated a debate regarding the terminology researchers and clinicians should be using when describing language impairment following TBI. Holland (1982) argued that language disorders following TBI are not aphasia but are secondary to cognitive and memory impairments. She objected to Sarno's term "subclinical aphasia" as inappropriate labelling. Braun and Baribeau (1987) further criticised Sarno for not reporting nonverbal psychological functions which they felt precluded the differentiation between generalised intellectual dysfunction and aphasia. This foreshadowed the interest which was to follow in the relationship between cognitive impairments and communication.

By the middle to late 1980s there was also an increasing awareness of the interplay between cognition and language so that the term *cognitive-language disorder* was introduced (Hagen, 1984; Kennedy & DeRuyter, 1991). This led researchers to investigate the relationship between the cognitive disturbances that frequently follow TBI and psycholinguistic aspects of language. Hagen (1984) described the relationship between the commonly occurring cognitive impairments following TBI and their effects on language processing. For example, Hagen suggested that the impairments of attention, memory,

sequencing, categorisation and associative abilities are the result of an impaired capacity to organise and structure incoming information, emotional reactions and the flow of thought. Such impairments, Hagen argued, cause a disorganisation of language processes. Cognitive disorganisation is reflected through language use which is characterised by irrelevant utterances which may not make sense, difficulty inhibiting inappropriate utterances, word-finding difficulties and problems ordering words and propositions. Prigatano et al. (1985) described nonaphasic language disturbances following TBI including the problems of talkativeness, tangentiality and fragmented thought processes. Some attempt was made to compare eight TBI subjects who were described by relatives as "Talkative" on the Katz-R Adjustment Scale with 40 TBI subjects who were described as "Non-Talkative" on their respective neuropsychological status (e.g., on the WAIS, WAIS-R Vocabulary, Block Design and Digit symbol scores) but no differences were found between the two groups. In addition, these authors described a single TBI subject who was subjectively noted to be tangential in a written text and who was found to evidence difficulty with short term memory and with shifting cognitive set (as measured on the Trails Test). The only "language" difficulties noted were in naming pictures, repeating sentences and rapidly retrieving names on a word fluency task although these deficits were not reported to be "obvious" in casual conversation. Prigatano et al. therefore argued

that this tangential output was the result of the association of core neuropsychological impairments with tangential thinking and communication.

More recently the term *cognitive-communication disorder* has been used (Hartley, 1995). The focus on cognition arose from an examination of the underlying pathophysiology of TBI which commonly results in multifocal cerebral damage with a preponderance of injury to the frontal lobes. Cognition can be broadly described as "mental activities or operations involved in taking in, interpreting, encoding, storing, retrieving and making use of knowledge or information and generating a response" (Ylvisaker & Szekeres,1994 p.548). Examples of cognitive processes attributed to the frontal lobes include attention to stimuli, remembering and learning, organising information, reasoning and problem solving. In addition to specific cognitive processes, the frontal lobes appear to mediate executive control of thought and behaviour. Such executive functions include goal setting, behaviour planning and sequencing, goal oriented behaviour initiation and evaluation of behaviour (Lezak, 1993). It became increasingly obvious to researchers that it was impossible to assess language functioning without taking neuropsychological functioning into account. This has lead most recently to attempts to correlate neuropsychological test results with TBI subjects' performance on specific discourse tasks (e.g., Coelho, Liles & Duffy,

1995; McDonald & Pearce, in press).

1.1.3 Discourse approaches

By the end of the 1980s, researchers were focussing their attention less on isolated language functions and more on the impact of linguistic impairments on discourse functioning (e.g., Penn & Cleary, 1988); discourse being defined by Ulatowska and Bond-Chapman (1989) as a unit of language which conveys a message. There are different types of discourse tasks which have also been referred to as different discourse *genres*. A genre is a particular text-type, which has its own structure and sequence. Some types of discourse genres include narrative (or recounting a story), procedural (a set of instructions for doing something), expository (giving an opinion or discussing a topic in detail) and conversation. This change in focus represented a significant shift in the way communication problems following TBI were viewed. Developments in discourse analysis were related to a proliferation of interest across a number of disciplines including sociology (e.g., Hymes, 1986; Labov, 1970), psychology (e.g., Mandler & Johnson, 1977), artificial intelligence (e.g., Schank & Abelson, 1977) and linguistics (e.g., Grimes, 1975; van Dijk, 1977). Particular techniques in discourse analyses have been derived from both the psycholinguistic and sociolinguistic perspectives. The psycholinguistic analyses include measures of

syntax (Chapman, Culhane, Levin, Harward, Mendelsohn, Ewing-Cobbs, 1992; Glosser & Deser, 1990; Liles, Coelho, Duffy & Zalagens, 1989), productivity (Hartley & Jensen, 1991; Mentis & Prutting, 1987) and content (Hartley & Jensen, 1991). On the other hand, sociolinguistic techniques include cohesion analysis (Coelho et al., 1991; Hartley & Jensen, 1991; McDonald, 1993; Mentis & Prutting, 1987), analysis of coherence (Chapman et al., 1992; Ehrlich & Barry, 1989; McDonald, 1993), analysis of topic (Mentis & Prutting, 1991) and compensatory strategies (Penn & Cleary, 1988). The practical application of these new methodologies to individuals with TBI has proven to be fruitful as a means to exemplify communication disorders not apparent in traditional testing.

Discourse analysis was initially used to describe the communication of people with aphasia following stroke (Bottenberg, Lemme & Hedberg, 1985; Ulatowska, North & Macaluso-Haynes, 1981a, b) which led to descriptions of treatment using discourse level tasks (Armstrong, 1993; Ulatowska & Bond-Chapman, 1989). Examining discourse as an index of communication following TBI occurred for the following reasons: a) To address the need for scientific verification of clinical impressions of the discrepancy between TBI subjects' performance on traditional language tests and their impaired communicative functioning in social contexts; b) To examine the relationship between language

and cognition in connected speech tasks; and c) To address the need for assessments to form the basis for treatment of communication in real life contexts taking into consideration the impact of communication impairment on disability and handicap.

Since the early discourse studies (e.g., Mentis & Prutting, 1987; Milton, Prutting & Binder, 1984) there has been a proliferation of attention to different types of discourse genres and an array of approaches has emerged to measure them. Most of these approaches have been borrowed from the disciplines of pragmatics, behavioural psychology and sociolinguistics. Discourse analyses have varied from the microlinguistic (examining discourse at the word or sentence levels), macrolinguistic (examining discourse across sentences and/or at the level of the entire text) to a miscellaneous group of analyses examining appropriateness and productivity. Each of these three areas will be discussed in turn.

1.1.3.1 Microlinguistic analyses of TBI discourse

The analyses of discourse in TBI subjects at word and sentence levels have been mostly derived from a psycholinguistic viewpoint with an emphasis on phonologic and lexical production and syntactic aspects. Results indicate that

TBI subjects generally evidence intact language functioning with the exception of naming abilities (Milton et al., 1984; Penn & Cleary, 1988). An exception to this was found by Glosser and Deser (1990) who found that their TBI subjects produced significantly more verbal paraphasias but no more indefinite terms than their normal controls. A problem with this study, however, was that subjects were selected because their primary functional deficit was a "fluent language disorder" although the presence of aphasia was not specified. The presence of aphasia and/or dysarthria must be resolved prior to interpreting findings regarding phonologic and lexical production deficits in TBI subjects (Coelho, 1995).

Syntactic aspects of discourse have been investigated with TBI subjects according to syntactic complexity as measured by the percentage of T units containing dependent clauses (Chapman et al., 1992), embeddedness of subordinate clauses (Glosser & Deser, 1990) and subordinate clauses per T unit (Liles et al.,1989), with no differences being found between TBI and normal subjects. Ratings of syntactic complexity have also been judged as appropriate on various pragmatic rating scales (Ehrlich & Barry, 1989; Milton et al., 1984; Penn & Cleary, 1988). Glosser and Deser (1990) found that their TBI subjects made significantly more grammatical errors that the normal subjects (such as omissions of the subject,

main verb and other grammatical morphemes), even though they demonstrated an adequate range of grammatical constructions in their spontaneous speech. These findings must be viewed cautiously given that aphasia was not ruled out in the TBI subjects.

1.1.3.2 Macrolinguistic analyses - effects of context on text

Since the early descriptions of language production following TBI it as been noted that the communication of these subjects appears to be tangential, with difficulties with topic maintenance and shift. Psycholinguistic analyses at word level failed to delineate these problems and therefore researchers used analyses which examined the connectedness of TBI subjects' discourse. These analyses (cohesion analysis and analysis of topic) represented a significant shift in the way language use was measured. The effects of the genre being used were taken into account by researchers when they evaluated their findings on various measures. The effect of context on the text produced is an important development that will continue to be expanded upon in this thesis, and indeed this assumption underpins the interpretations that can be made regarding language use. The analysis of cohesion (Halliday & Hasan, 1976) examines the components of the linguistic system that enables a text to function as a single meaningful whole. The semantic relations that function to achieve cohesion are expressed partly

through the vocabulary and partly through the grammar. According to this analysis, sentences are joined by various types of meaning relations described as cohesive markers or ties. Mentis and Prutting (1987) compared three TBI subjects with three normal speakers using the analysis of cohesion during conversational and narrative samples with a familiar partner. It is not stated whether this is one of the authors or a peer/family member. Results indicated that syntax was relatively well preserved in all three TBI subjects. Qualitative and quantitative differences in the TBI subjects' cohesion abilities were reported whereby subjects used fewer cohesive ties in the narrative tasks. Hartley and Jensen (1991) found similar results during TBI subjects' production of narrative and procedural discourse tasks. Liles et al. (1989) however found that the number of cohesive ties (per T unit) produced by their TBI subjects was the same as the normal subjects for both story retelling and generation. These findings are consistent with Glosser and Deser (1990) and McDonald (1993) who found that their TBI subjects did not differ from normals on cohesion measures.

While there were no absolute differences between the groups of subjects, there were differences in the patterns of cohesive ties used by TBI subjects when compared with controls across discourse tasks. For example, Liles et al. (1989) found that in a story retelling task, similar proportions of Referential, Lexical and

Conjunctive markers occurred in both groups. However, in a story generation task the TBI subjects showed a reversal of the pattern of normal subjects as well as a reversal of their own cohesive pattern used in the story retelling task. In story generation all the TBI subjects decreased the proportional use of Reference and increased the proportion of Lexical ties. The differences in the proportional use of types of cohesive ties across story tasks were attributed to the apparent direct reference by TBI subjects to the stimulus picture. These references were described as being unrelated to the rest of the text. The lack of integration of lexical items into the text structure resulted in them being judged as being incomplete ties.

Variation of TBI performance across language genres was also observed by Mentis and Prutting (1991) in their detailed analysis of topic in a TBI subject and matched control across ten language samples. The topic analysis was found to be sensitive to the different constraints placed on speakers in the monologue compared with conversation conditions. For example, the TBI subject produced a higher percentage of unrelated ideational units in the monologue condition, which was less structured than the conversation condition. Similarly, the TBI subject repeated a higher percentage of old information units in the monologue condition. The authors suggested that this finding reflected a strategy used by

the TBI subject to extend monologue topics in instances in which he was unable to continue through the addition of novel information. It was also suggested that he could not rely on the contributions of his communication partner to the same extent as in the conversation conditions.

1.1.4 Pragmatic approaches

Embodied within the broader field of discourse analysis is the study of the pragmatic nature of interactions. Pragmatics is concerned with the way language is used and the context of its use rather than the forms it takes (Levinson, 1983). As communication problems following TBI have been described as a difficulty with language use rather than form (Holland, 1982) it is not surprising that the tenets of pragmatics have been applied to this population.

Some approaches to assessment and treatment of *social communication* have also been driven by a focus on language occurring in a social context (Hartley, 1995). The focus on *functional communication*, (communication in natural environments) has lead to assessment tools which can be used to describe a person with TBI's functioning outside the clinical environment. This recognition of the importance of examining discourse in social contexts has also lead to increasing involvement of family, health care workers and most importantly the person with TBI in the rehabilitation process.

With the pragmatics revolution of the early 1980s (Levinson, 1983) came the introduction of a number of rating scales using items which served to encapsulate particular pragmatic behaviours, such as turn taking and topic maintenance (e.g., Ehrlich, 1988; Penn & Cleary, 1988; Prutting & Kirchner, 1987). The clinical utility of these scales has made them an essential part of most clinicians' assessment repertoire. Rating scales are clinically useful. They are quick to administer and highlight areas which may need further investigation. However, they are based on loose and eclectic theoretical foundations. The eclectic basis to rating scale development emerges from the need to assess the wide variety of aberrant behaviours that can follow TBI. Rating scales have been used with a range of discourse types including procedural discourse (McDonald, 1993), narrative, (Ehrlich & Barry, 1989; Parsons Snow, Couch & Mooney, 1989) and clinical interviews between the TBI subject and a therapist (Ehrlich & Barry, 1989 ; Milton et al., 1984 ; Parsons et al., 1989; Penn & Cleary, 1988). Deficiencies with discourse were found in the interactions of TBI subjects in all cited studies.

Milton et al., (1984) were the first to describe the pragmatic deficits of patients with TBI using an early version of the Pragmatic Protocol (Prutting & Kirchner, 1983) to compare five people with TBI with five normal subjects in unstructured

conversation with a speech-language pathologist. The Pragmatic Protocol is described as a screening tool designed to isolate specific areas for further investigation. Conversational topics are not specified; however, a range of topics are suggested prior to the sampling. Results indicated that every subject with a TBI exhibited some inappropriate behaviours. All subjects had difficulty with prosody, four of the five subjects had difficulty with topic selection, topic maintenance, turn taking initiation, turn taking pause time, and turn taking contingency. Three of the five were judged to have problems with quantity/conciseness and two of the five were judged to have poor intelligibility and fluency.

The eclectic nature of the Pragmatic Protocol raises questions about its theoretical foundations. Prutting and Kirchner (1983, 1987) incorporated items taken from a range of linguistic theories including ethnomethodology (Sacks, Schegloff & Jefferson, 1974), speech act theory (Austin, 1962; Searle, 1969,1975), sociolinguistics (Keenan & Schieffelin, 1976) and systemic functional linguistics (Halliday & Hasan, 1976) into three broad behavioural categories. These were *verbal* behaviours (such as speech act analysis and turn taking), *paralinguistic* behaviours (such as intelligibility and prosody) and *nonverbal* behaviours (such as gesture and facial expression). It is worth noting

at this point that the terminology Prutting and Kirchner use is not necessarily the same as that used by other linguists, and that they collapsed and grouped units to suit their own purposes. For example, their use of the term "speech act" is not equivalent to Austin's (1962), Searle's (1969) or Grice's (1975) use of the term. Austin (1962) first based the idea of speech acts on the notion of speaker intention, which was expanded in considerable detail by Searle (1969, 1975). Their central argument is that language performs social acts. When we say "I warn you" or "I promise you", those words themselves are the warning or the promise. The speech *act* is doing something by saying it. Often what the words do is not contained in the surface of the message, such as a typical polite request "Can you open the door?". In this case the surface message is a question but the intended meaning is a request. Searle made a distinction between direct speech acts such as "Pass me the salt" and indirect acts, where the intention of the speaker is not comprehensively encoded in the words of the utterance as in the examples, "Could you pass me the salt?"or "Do you want to pass the salt?"

The Pragmatic Protocol includes a wide range of speech acts and encompasses a great deal more than the original speech act theorists intended as indicated by the definition of speech acts provided by Prutting & Kirchner (1987): "The ability to take both speaker and listener roles appropriate to the context"

(p.118). Thus for example, if an interlocutor can take a speaker and listener role, but is unable to respond or give indirect requests, then marking this particular item could present the judge with difficulty because the subject is initiating direct statements and answering questions but fails to detect an indirect request.

Although interjudge and intrajudge reliability on the Pragmatic Protocol is high (Milton et al., 1984) it is still difficult to determine exactly what is being measured, apart from a global impression of a particular category. For example to rate "cohesion" (Halliday & Hasan, 1976) as being "appropriate" or "inappropriate" is inadequate, given Armstrong's (1987) finding that listeners' perception of cohesion as rated on a four point scale correlates poorly with the Cohesive Harmony Index (Hasan, 1985), a technically derived measure of linguistic cohesion. Therefore a single binary judgement of appropriate/inappropriate may provide little insight into the language structures being judged.

Ehrlich and Barry (1989) found that the selected communication behaviours (e.g., intelligibility, eye gaze, sentence formation, coherence, topic management and initiation) could be reliably rated and provided descriptive information

concerning the communicative functioning of TBI adults. The items are described as being "behaviourally anchored" but there does not appear to be a unifying linguistic or behavioural underpinning to these rating scales. Rather the items merely represent "selected features of discourse" (p.194) without theoretical rationale for their "selection".

In contrast, McDonald (1993) based the items in her rating scales (Repetitiveness, Detail, Clarity, Organisation, Effectiveness) on the maxims of Quantity and Manner (Grice, 1975). McDonald (1993) found that while linguistic skills were relatively normal in two TBI subjects, they had difficulty meeting the informational needs of the listener and the informational content and sequence of delivery were aberrant when compared to control subjects.

Another approach to the assessment of conversation with TBI subjects was suggested by Penn and Cleary (1988) who developed a taxonomy of "compensatory strategies" which they used to classify communication behaviours which had the apparent purpose of facilitating conversation. These comprised seven broad types of compensation including simplification, elaboration, repetition, fluency, sociolinguistic, nonverbal and interlocutor strategies. This taxonomy was used to describe TBI subjects' use of compensatory behaviours

during interactions with a therapist who was known to them. In Penn and Cleary's (1988) study, all subjects were found to use compensatory behaviours, which were explained as direct attempts to compensate for underlying cognitive and memory problems. Some of these included the use of *"simplification"* strategies such as having short conversational turns, *"elaboration"* strategies, such as the use of circumlocution and *"sociolinguistic strategies"* like self correction and requests for clarification. Communication partners of TBI subjects were also judged according to the taxonomy of compensatory strategies and in this case the most commonly used strategies were probe and yes/no questions.

This study was one of the first to analyse the discourse of the *therapist* in interactive language samples and it demonstrated the heterogeneity of communication disorders following TBI, as all six subjects demonstrated different patterns of compensation. Viewing communicative behaviours which are often seen as problematic in terms of compensatory strategies was a valuable insight. However, the underlying theoretical construct of Penn's Profile remains fragmented with its roots also in the field of pragmatics.

Such hybrid approaches are common in the field of pragmatics generally. Speech-language pathologists and communication researchers have been

attracted to the field because it provides a way of studying communicative events holistically, rather than dividing them into their component parts. But, as Penn and Cleary (1988) remind us, pragmatics has a "mixed academic heritage including contributions of philosophy, sociology, linguistics and anthropology" (p.180). Such a mosaic approach to language in context, using different parts of the expanse of pragmatics theory, makes comparison between studies difficult, and a clear description of the communication problems following TBI almost impossible. As Lesser and Milroy (1993) state "the absence of an agreed descriptive and theoretical framework makes the task of pragmatic analysis difficult and contentious" (p. 45). This leads to terminological proliferation and confusion, and a blurring of the distinctions between identification and explanation of behaviour (Gallagher, 1991). Clearly, there are significant challenges ahead while the description of communication disorders in context continues to draw on the heterogeneous field of pragmatics. Some of the questions posited by Gallagher (1991) summarise these concerns :

> will pragmatic analyses clarify long-standing enigmas of language disorder, such as language structural inconsistencies? Are the interactional difficulties exhibited by individuals with language disorders the consequence of limited structural skills or are they related to broader nonlinguistic impairments that may be cognitive or social in nature?

> Finally, can the boundaries of pragmatics be made sufficiently clear and delimited enough to support reliable clinical predictions? (p. 7)

1.1.5 Problems with the definition of "conversation"

Compounding the difficulties arising from the variegated field of pragmatics is the problem of defining the nature of conversation. A definition must recognise that it is a two way process, where information sharing takes place as an "interactionally negotiated achievement" (McTear & King, 1991). The term "conversation" has been used with abandon with some studies examining any kind of connected speech above the level of the sentence, and terming these tasks "conversational" (Ehrlich & Barry, 1989; Parsons et al., 1989). Some of these tasks include picture description, and describing routine activities, such as changing a tyre. Describing the steps one needs to take to change a tyre cannot be considered a conversational task as it is a procedural discourse task. It is monologic (rather than dialogic) and therefore does not involve the communication partner in the same way that a "conversation" would. Unfortunately some studies have made assumptions regarding conversational skills of people with TBI from results which involved completion of tasks which were in no sense interactional (Ehrlich & Barry, 1989; Parsons et al., 1989). Such assumptions are falsely based and conclusions from these studies need to

be carefully considered.

Most studies have sampled subjects speaking to research assistants or speech-language pathologists in unstructured conversations (e.g., Bond & Godfrey, 1997; Ehrlich & Sipes, 1985; Mentis & Prutting, 1987; Milton et al., 1984; Prutting & Kirchner, 1987). These interactions are typically described as "free conversation" (Perkins, Body & Parker, 1995) or as a simulation of an interaction where the subjects were meeting the interviewer for the first time (Bond & Godfrey, 1997; Linscott et al., 1996). Other approaches to assessing TBI subjects during information exchange include varying the structure of interactions from structured, where TBI subjects are asked closed questions (e.g., Giles, Fussey & Burgess, 1988), to semistructured, where subjects are asked specific open questions or the topic of discussion is chosen by the researcher/interviewer (e.g., Glosser & Deser, 1990; Mentis & Prutting, 1991; Snow, Douglas & Ponsford, 1997). The structuring of these interactions was determined by the researchers and provided little opportunity to evaluate how a person with TBI might contribute to the production of a joint text.

In previous research the TBI subject has been interviewed by a researcher or speech-language pathologist who was sometimes familiar (e.g., Mentis &

Prutting, 1987/1991; Penn & Cleary, 1988) and sometimes a stranger to him/her (e.g., Schloss, Thompson, Gajar & Schloss, 1985). TBI subjects have been sampled in interview or structured conversations where a speech-language pathologist or research assistant is instructed to speak with them for a set time interval. That is, the context of the situation and the genre presets the speaker roles that the TBI subjects can assume. The confederates or interviewers are often given instructions which specifically prohibit them from having a normal conversation. For example, Schloss et al. (1985) instructed their female confederate to limit her statements to 3 sentences. Glosser and Deser (1990) also reported that their interviewer attempted to minimise participation in the communication exchange by confining her responses to "uh-uh" and general questions. This focus on the discourse produced by the TBI subjects reflects a problem-oriented, deficit driven approach to their discourse, as if it is the TBI subject who is the problem, rather than viewing the interactant as also contributing to the final product. This in effect changed the genre, so that rather than being conversation, these interactions were often interviews. Conclusions drawn regarding the performance of TBI subjects must therefore be limited to the particular speaker roles that were available to them according to the genre. Most of these conversations became more-or-less structured interviews, because the right to open and close the interaction as well as to choose the topic of discussion

was controlled by the interviewer. Some researchers have attempted to address this by requesting that interviewers try to have as normal a conversation as possible by not just asking questions (e.g., Coelho et al., 1991) but by also consciously attempting to make requests for clarification, requests for expansion and comments (e.g., Snow et al., 1997). This, however is just as likely to distort or at least have an unknown effect on the interaction.

Previous research has reported on TBI subjects' ability to request information (Coelho et al., 1991; McDonald, 1992; Mentis & Prutting, 1991; Schloss et al., 1985; Turkstra, McDonald & Kaufman, 1995). However, in only two studies did the procedure specifically require the subjects to request information. McDonald (1992) asked her subjects to make requests for action in the form of hints, whereas Turkstra et al. (1995) also asked subjects to role-play requests in response to verbal descriptions of common daily living situations. No studies were found that required TBI subjects to request information from a variety of interlocutors in a practical, real-life context. Taking a functional perspective has been reported to be crucial by many researchers in this area (e.g., Hartley & Griffith, 1989; Ylvisaker, Urbanczyk & Feeney, 1992). Evaluating the communication of TBI subjects with members of the community including relatives, therapists and other community agencies is recommended as crucial in

the therapy planning process (Malkmus, 1989; McDonald, 1992; Sohlberg & Mateer, 1989); however no studies to date have analysed the interactions of these subjects with interlocutors other than researchers or speech-language pathologists.

Characterising conversation or social interactions generally in a meaningful way, and contrasting them with other discourse types (such as narrative and procedural) requires a coherent model which captures the complexity of the genre. What has been lacking in the literature describing discourse following TBI is a theoretical model which can account for the changing communicative environments that we are faced with when conversing on a daily basis. The concept of context has been taken up as a starting point to describe the characteristics of a communicative situation. Hartley (1992) identified three categories of context; (a) participants, (b) setting and (c) medium or code. "Speakers select words, sentence structures, and modes of communication based on their knowledge of the cognitive and social status of the communication partner, of the physical context or setting of the communication, and of the linguistic and non-linguistic context" (Hartley, 1992, p. 265). This way of viewing communication was driven by the pragmatics literature and while valuable, it fails to elaborate on how different contextual variables may influence

the way the words, sentences and modes of communication are selected.

Current standardised measures of communication function often fail to describe an individual's ability to communicate effectively in real life contexts (Sohlberg & Mateer, 1989). The difficulty with many functional assessment and therapy approaches, however, is a lack of linguistic specificity (Armstrong, 1993). Functional approaches have been advocated for a number of reasons. These include (a) the development of pragmatic models of communication which have provided us with a theoretical basis for understanding language in natural contexts; (b) research has demonstrated the prevalence of impaired functional communication after TBI, where aphasia is absent (Hartley & Jensen, 1991; Milton et al., 1984); (c) impaired communication/interpersonal skills have been linked to poor long-term social and vocational outcomes after TBI (Ben Yishay, Silver, Piasetsky & Rattok, 1987; Oddy, 1984); and (d) funding agencies, insurers and administrators are requiring greater accountability from professionals regarding the functional outcomes of treatment and the cost effectiveness with which these outcomes are achieved.

The evaluation of the global structuring of TBI discourse has been limited to narratives with the assessment of story structure, measured by complete episodes

(Chapman et al., 1992; Coelho et al., 1991; Liles et al., 1989; Stein & Glenn, 1979). Chapman et al. (1992) observed that their group of TBI subjects produced fewer essential story components than normals in a story generation task, failed to signal new episodes with setting information and often omitted essential action information. These authors reported that it was unclear whether these difficulties were the result of an underlying impairment in an internal story schema or a difficulty implementing a story schema during ongoing discourse formulation. They further postulated that "frontal lesions may disrupt the organisational schema which guide discourse formulation " (p. 58).

These results supported Liles et al.'s (1989) study of story telling and story generation with TBI subjects. In story generation tasks, three of the four TBI subjects produced no episodes. This difficulty was related to the notion of cognitive reordering (Blank, Rose & Berlin, 1978). To adequately tell a story a speaker needs to transpose a **static** representation of the depicted events in a picture to a **dynamic** representation or a story. This disparity between context and the required language use is described as cognitive reordering. The fact that the TBI subjects failed to produce episodes suggested to Liles et al. that this task required an interaction of cognition and language, which the TBI subjects could not engage in.

While this research has provided some direction with regard to the structuring of narrative tasks, there has been no research examining the structure of TBI interactions. Kennedy and DeRuyter (1991) reported that conversation was easier than narrative production for TBI subjects. They attributed this to conversation relying heavily on rules that are retrieved from past learning. This is tempered with a caution that as a conversation becomes more abstract or lengthy, rules are often broken.

So while recent research is starting to recognise the importance of viewing communication in a dialogic, interactive setting (Hartley, 1992; Ylvisaker et al., 1992) it would appear that a further conceptualisation of communication in context is necessary. This leads us to the theory of Systemic Functional Linguistics (SFL)(Halliday, 1985/94) which may provide a more coherent model of language functions.

1.2 Systemic Functional Linguistics

This thesis uses analyses which are derived from the theory of Systemic Functional Linguistics (SFL)(Halliday, 1970; 1985/94). This theory represents a sociolinguistic perspective on language use, which is in contrast to the psycholinguistic analyses more commonly used in the evaluation of

communication disorders following TBI (Kerr, 1995; Sarno, Buonaguro & Levita, 1987). Psycholinguistics is concerned with language as a set of mental processes (Lesser & Milroy, 1993). In recent years, psycholinguistic models have been extended to account for language processing at the level of the word and sentence (Coltheart, 1987). Linguistic description is abstracted away from the discourse and situational context. Sociolinguistics, in contrast, is concerned with language in its social context. It is interested in "why we speak differently in different social contexts... and identifying the social functions of language and the ways it is used to convey social meaning" (Holmes, 1992, p.1).

Systemic functional linguistics is a theory developed by Halliday (1970, 1985/94) of how language works based on the meanings which can be conveyed according to the context they occur in. Halliday (1985) was concerned with the practical use of language, which he described as a system of choices. Each time we speak we make choices from a range available to us about how and what we are going to say according to who we are speaking to and the situation we are in. The language choices that are made by a speaker create particular meanings which also usually predetermine their communication partner's language choices. The purposes of language or meanings communicators need to convey were seen by Halliday to be of three kinds, which he called metafunctions. With each

metafunction detailed sets of analyses exist in systemic functional linguistics to account for the complexity of language. These metafunctions are :

1. Ideational meanings. These express the processes, events, actions, states and/or ideas. Analyses within this area of meaning examine the types of words used to express processes (or verbs) and participants (or what the text is about). For example, "walk" is a "material" process which "agents" do (e.g.,"Jack is walking") perhaps involving a goal "home" (e.g., "Jack is walking home"). There are also mental processes such as "think" and relational process such as "to be". These analyses investigate how speakers choose to represent their experiences through the types of processes and participants they use.

2. Textual meanings. These ensure that what is said is relevant and relates to its context. Analyses of textual meaning examine how texts and clauses are structured in relation to each other. For example, cohesion analysis describes the connections between words in a piece of discourse.

3. Interpersonal meanings. These are concerned with communication as interaction and how this is achieved. Analyses therefore focus on how the speaker and the hearer negotiate the interaction, e.g., who initiates an interaction and how this occurs.

Analyses of interpersonal meanings are therefore useful in describing the discourse of people with TBI as they capture the problems they experience within their communicative interactions. Being able to provide information credibly, asking for clarification of information given by others and adhering to the appropriate sequence of events during a telephone enquiry, for example, all require an ability to process interpersonal meanings. People with TBI, however, have difficulty with these "interactional" skills. Analyses from within the interpersonal function are used in this thesis to describe the difficulties which occur during interactions between TBI subjects and a range of communication partners.

1.2.1 Context - field, tenor and mode

As well as describing the effect of context on the text (i.e., the language produced), systemic linguistics explores how context influences language. It is important to understand context as it has an essential role in SFL. Eggins (1994), building on Halliday's notion of context, suggested that systemic linguistics has attempted to describe:

> 1. exactly what dimensions of context have an impact on language use. Since clearly not every aspect of context makes a difference to language use ..just what bits of the context do get "into" the text? And 2. which

> aspects of language use appear to be affected by particular dimensions of the context. For example, if we contrast texts in which the interactants are friends with texts where the interactants are strangers, can we specify where in the language they use this contextual difference will be expressed? (p.9)

Viewing communication in this way allows for a description which reflects the contributions made by both members of the dyad. The act of communicating has been described as an "interactionally negotiated achievement" (McTear & King, 1991), as a collaborative effort (Clark & Schaefer, 1987) and more recently as a "socially co-constructed" enterprise (Ylvisaker, in press). This emphasis on the joint nature of the act of communication underlies the way in which this study was developed. It was designed to tap into the process of the interactions by examining the contributions of both (or all) parties during a communicative event. The social nature of language is explored with a view that information exchange, and therefore communication, more generally, occurs in social contexts, through relationships such as therapist and patient, or mother and son, or customer and shopkeeper, which are "defined in the value systems and ideology of the culture" (Halliday & Hasan, 1985, p. 5). The words and structures that are generated in these contexts get their meaning from the

activities in which they are embedded, and they also influence the choices that are available and the choices that are made.

Systemic functional analyses are based on the premise that verbal communication is a set of *texts* that are jointly constructed. As Halliday (1985) states "spoken language .. is presented to us as a process; moreover like many processes it is characterised by a continuous flow, without clear segments or boundaries, so that it appears as a *text*" (p. xxiii). A text is seen as both a product (in the sense that it has an output which can be represented in systematic terms) and a process (whereby there is a continuous process of semantic choice). This process is seen as an interactive event which allows for the social exchange of meanings (Halliday & Hasan, 1985, p. 10). The fundamental form of a text is that of dialogue, with an interaction among speakers. The text which arises from an interaction represents an instance of social meaning in a particular context of situation. To allow for a clear description of the text, the context of situation must be specified in detail to allow for some interpretation of the linguistic resources used. This allows us to develop a systematic relationship between the social environment and the functional organisation of the language (Halliday & Hasan, 1985).

Halliday (1985) conceptualised context as a combination of three important dimensions. These are termed *field, mode* and *tenor* (and appear similar to Hartley's [1992] description of context). Field refers to what is happening and the content, e.g., a lecture, or a service encounter . The ideational metafunction relates to the field. The mode of the discourse refers to the part that the language is playing in the interaction in terms of the channel through which it is being transmitted (e.g., oral vs. written). The textual metafunction relates to the mode of discourse. The tenor refers to "who is taking part, to the nature of the participants, their status and roles, e.g., lecturer-student, two friends, salesperson-customer. The interpersonal metafunction relates to the tenor. These three dimensions have a significant and predictable impact on language use.

The following example shows the context of phoning to find out some information about bus timetables:

Contextual variable	Description
Field	**a verbal service encounter over the telephone regarding bus timetable information**
Tenor	**unfamiliar participants, unequal status between participants, customer - superordinate, information provider - subordinate**
Mode	**spoken, but may refer to written material**

Previous analysis of discourse performance following TBI has been fragmentary with attention being given to selected features of talk, such as topic maintenance or productivity measures such as total words produced. The limitation is that this partial analysis cannot describe the ways in which patterns from different levels of language (such as word, clause, above the clause) interact to produce meanings. Previous analysis has not sought to examine connections between the work that is achieved in the micro-interactions of everyday life and the macro social world within which interactions take place (Eggins & Slade, 1997). There are two major benefits to the analyses developed within this framework: 1) SFL provides an integrated, comprehensive and systematic model of language which enables patterns to be quantified and described at different levels with varying degrees of detail; and 2) it is concerned with the social dimensions of language so that interactions between people can be seen as involving different linguistic patterns which construct social identity and interpersonal relations (Eggins & Slade, 1997).

1.2.2 Critical linguistics

Critical linguistics is also used to interpret results in this thesis (Fairclough, 1989). It takes SFL analysis a step further by examining the importance of language as an avenue for examining social change. Critical linguistics combines

the analysis from systemic linguistics with ideology (Fairclough, 1992). Discourses are seen to position people in different ways as social subjects (for example, as doctors or patients), and it is the social effects of discourse that are focused upon. As Fairclough (1992) states, "critical" implies showing connections and causes which are hidden and it also implies intervention, for example providing resources for those who may be disadvantaged through change. The perspective of critical linguistics or critical discourse analysis focuses on the relationship between language, ideology and power (Fairclough, 1989; Hodge & Kress, 1993) and the relationship between discourse and sociocultural change (Fairclough, 1992). Researchers in the "critical" tradition have been influenced by work in critical sociology, by the French historian Foucault (1972) and by the philosophers and sociologists Bourdieu (1977) and Habermas (1984). This analysis is a socially and politically committed analysis in which language is understood and explained in terms of its key role in maintaining power relations. In contrast with other discourse analyses, the critical approach has not examined informal conversations but has concentrated on discourse types where inequality exists (for example, political interviews, job and police interviews, advertising). Such analyses use a detailed description of linguistic structures and vocabulary to explain how discourse manipulates people and maintains the status quo.

For example, in a detailed analysis of the vocabulary and grammar used by Margaret Thatcher in a radio interview, Fairclough (1989) explains how she combines authority with listener solidarity. Thatcher is described as creating a discourse which draws the listeners into her world through devices such as modal expressions and the use of "we" (as in "we must" or "we have got to"). The purpose of such an interview is to position listeners so that her vision becomes their vision. This way of analysing language structures is interpreted to show the strong and pervasive connections between linguistic structure and social structure (Fowler, Hodge, Kress & Trew, 1979).

Examining this relationship between linguistic and social structure in the present research assists in the interpretation of the data and provides direction in assessment and treatment strategies using the systemic approach. This research examines the differences in language use in interactions of people with TBI compared with controls. The research has been designed to vary the tenor relationships in these interactions. To fully appreciate the effects of these varied tenor relations on the language structures that are produced and to examine the effects of the language on the way the interactions unfold it is fruitful to take the social context and power relationships into account. Critical linguistics and critical discourse analysts assert that language and power stand in a particular

relationship:

> Because of the constant unity of language and other social matters, language is entwined in social power in a number of ways: it indexes power, expresses power, and language is involved wherever there is contention over and challenge to power. Power does not derive from language, but language may be used to challenge power, to subvert it and to alter distributions of power in the short or in the longer term (Kress, 1985, p.52).

To understand the social distribution of power, it is advantageous to examine language because:

> Language provides the most finely articulated means for a nuanced registration of differences in power in social hierarchical structures, both as a status system and in process. All linguistic forms which can be used to indicate relations of distance, and those which can indicate 'state' or 'process' serve the expression of power. In fact there are few linguistic forms which are not pressed into the service of the expression of power, by a process of syntactic/textual metaphor (Kress, 1985, p 52.).

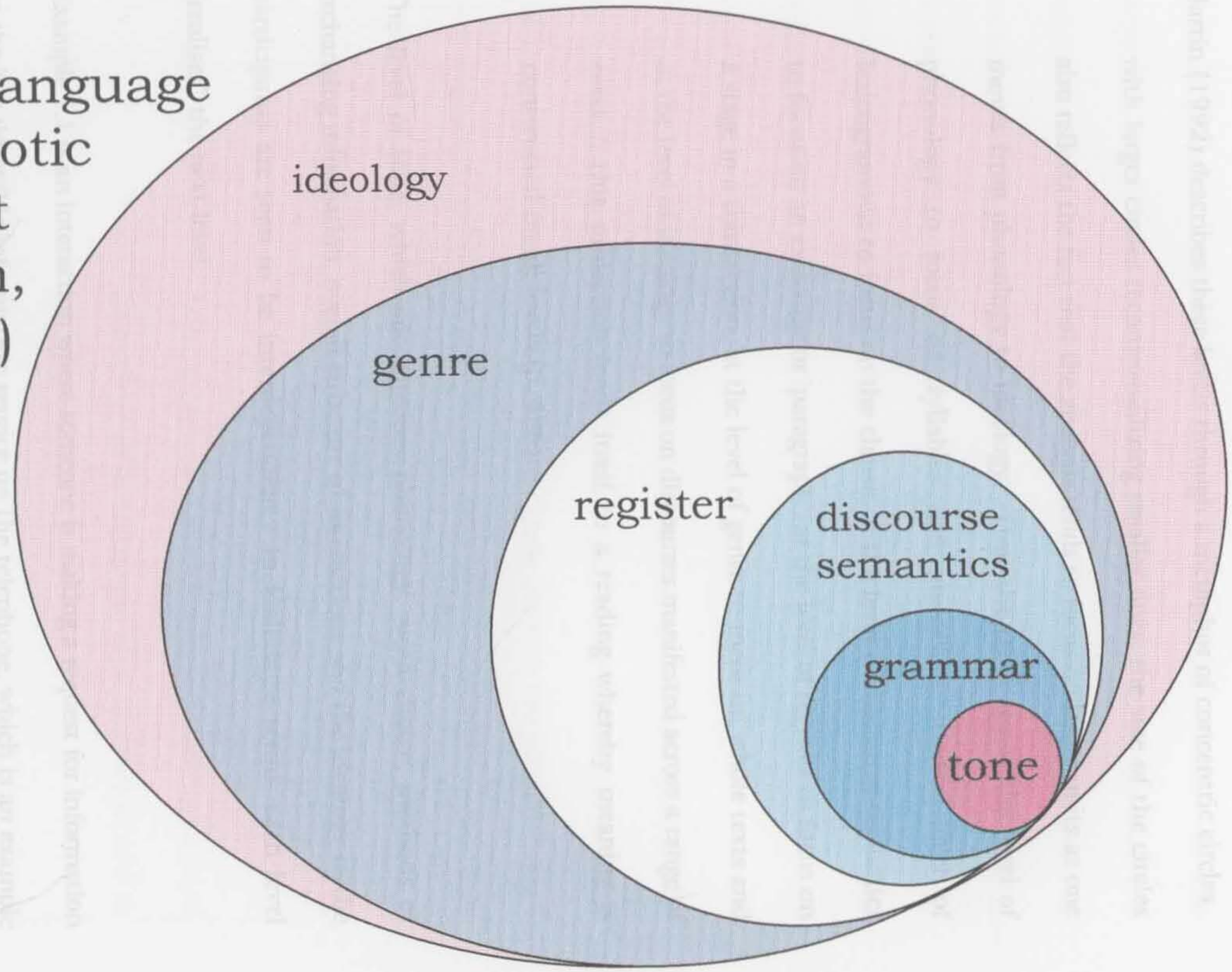
The three analyses used in the present research are from the interpersonal metafunction of SFL. Using these analyses it is possible to examine the ways people talk according to the social structures which are operating at the time. Fairclough (1995) proposed that SFL is the most useful linguistic framework with which to explore the diverse functions of language at different levels. He recognises SFL as:

> a functional theory of language oriented to the question of how language is structured to tackle its primary social functions... The view of language as social semiotic (Halliday, 1978) incorporates an orientation to mapping relations between language (texts) and social structures and relations (p.10).

1.2.3 The stratal levels of SFL

Halliday's (1978) perspective has been extended by the model proposed by Martin (1992). In this extended model, language is viewed as occurring across a number of strata (Figure 1.1).

Figure 1.1 Language and its semiotic environment (from Martin, 1992, p.496)



Martin (1992) describes these levels through a metaphor of concentric circles

> with larger circles recontextualizing smaller ones; the size of the circles also reflects the fact that the analysis tends to focus on larger units as one moves from phonology to ideology. Thus the tendency at the level of phonology to focus on syllables and phonemes, at the level of lexicogrammar to focus on the clause, at the level of discourse semantics to focus on an exchange or 'paragraph', at the level of register to focus on a stage in a transaction, at the level of genre to focus on whole texts and at the level of ideology to focus on discourses manifested across a range of texts.... this projection lends itself to a reading whereby meaning is constructed on all levels (p. 496).

The level of tone, which encompasses phonology, word choice, methods of exchanging information, overall structure of interactions and the ideology of the participants are seen to be interdependent. In Halliday's terms, each level "realises" the next level.

Example 1.1 is an interaction where someone is making a request for information to the bus timetable information service on the telephone, which is an example of the service encounter genre. At the genre level the analysis would be generic

structure potential analysis, which outlines the overall structure of the interaction. At the next stratal level down, the discourse semantics level, the analysis would be exchange structure analysis. This analysis provides a way of examining who has the knowledge in an interaction and how that knowledge is transferred. At the lexicogrammar level the wording used to make the request including what may be termed politeness markers used could be analysed. This would use aspects of mood and modality analysis.

The context of the situation (i.e., field, mode and tenor) has an impact on the way requests for information are made. This impact can be seen across all levels of analysis. For example, the type of request made between two people of equal status will be very different to one made by a superior to a subordinate. Example 1.1 shows a request for information between two people of equal status.

Example 1.1 Request for information between communication partners of equal status

Customer :	What time would I need to be at Strathfield station to catch a bus to Macquarie Shopping Centre and be there by 12.30?
Bus timetable person :	We don't have a service that does that.

In this example, the request for information could be analysed at different levels, where each level is interdependent with all others. Starting with the genre level, this request would form part of the Service Request (SR) element in the generic structure potential (GSP) analysis. The Service Request (SR) element is one of the obligatory elements in the GSP analysis. It is usually followed by a Service Compliance (SC) where the answer to the SR is provided. At the discourse semantics level, the exchange structure analysis would enable us to code the customer as a secondary knower (K2) or someone who does not have some information and who is requesting it from the bus timetable person who is the primary knower (K1). The degree to which a person is a primary knower has been associated with the degree of power they have in an interaction. At the lexicogrammar level we could code this request as a Wh-interrogative. At the tone level the request would be characterised by rising intonation. This request is said to be "congruently formed". That is, it conforms with all the features one would expect when fulfilling the task of requesting information.

Sometimes, however, requests are not congruently formed. This can be seen in Example 1.2.

Example 1.2 Request for information from superior to subordinate

Superior : Show me where the timetables are

Employee : They're over on the table (pointing)

In this example, the superior is requesting information from a subordinate. This is no longer a service encounter at the genre level and would more likely be part of a different generic structure potential such as workplace procedural discourse text. The superior's request for information would be coded in exchange structure analysis terms as a request for action. When requesting someone to do an action, you are said to be a secondary actor (A2) who requests an action from the primary actor (A1). Thus this request for information has now become a request for action. At the lexicogrammar level this request is therefore actualised as a command (or an imperative). At the tonal level there is a falling intonation pattern. Thus at all levels the different status of the participants is reflected in the language structures used. If people are in a position of unequal status their language use will reflect this from the tone they use through to the way information is requested and received and all these levels relate to the activity that is occurring at the time. As well as the genre and the context of situation, language choices also depend on our ideological positions, which are our biases or personal perspectives. Some of these influences may be quite unconscious or

inherent in the speaker's makeup (for example, gender, ethnicity, class, generation). These brief examples have attempted to demonstrate the depth and complexity of some of the analyses within the SFL framework.

1.3 Examining contextual influences in TBI discourse - issues to consider

1.3.1 Research design in TBI discourse studies

This thesis is designed to control for the effects of variation of context. Controlling the contextual configuration while at the same time investigating the dynamic and variable aspects of interactions represents a marriage between quantitative (Bench, 1991; Eastwood, 1988) and qualitative research methodologies (Prutting, Mentis & Zitzer, 1990; Spencer, 1993). The complex interplay of cognitive, social and behavioural deficits which are manifested as interactional impairments following TBI require a methodology which can capture this complexity.

Research which has focused on quantitative methodologies only (e.g., Kerr, 1995) are limited in the conclusions that can be made with regard to social communication for the subjects studied. This thesis investigates the socially driven issues articulated by Eastwood (1988) including discovering "what people are up to, what is important and meaningful to them, how they adapt to changes

and how they make sense of the world" (p.177).

The analyses used from the theory of SFL may resemble other "top down" quantitative approaches given that aspects of context can be controlled (such as the purpose of a communicative interaction) and that they enable us to observe frequencies of particular behaviours such as the rate of information giving. In combination with this view, however, is the acknowledgment that SFL is firmly based in a sociolinguistic perspective so that explanations are sought for behaviours rather than judging behaviours on preconceived notions of appropriateness (Simmons-Mackie & Damico, 1996).

This research therefore takes the view that quantitative and qualitative approaches can be seen to be complementary. Given that there is not a description of the nature of information exchange, global structuring of interactions or politeness markers used in the interactions of TBI subjects, this research will inform future theoretical development. By describing the language structures used at multiple levels of analysis, the questions covered in this thesis include how people with TBI and their communication partners use language and how their language is structured for use.

This thesis discusses clinical implications for assessment and treatment of interactional impairments following TBI with reference to the meanings being made and the context in which the meanings occur. An emphasis on measuring meanings in everyday communicative contexts throughout this thesis provides an empirical framework upon which assessment and treatment methodologies can be based.

Research in the area of communication and TBI has utilised both group and single case methodologies. The typical number of TBI subjects in such studies is small, ranging from single cases (Giles et al., 1988) to 20 cases (Chapman et al., 1992). The majority of studies have concentrated on three to five subjects (Coelho et al., 1991; Mentis & Prutting, 1987; Milton et al., 1984), with an examination of both the group trends and individual characteristics. Small groups of subjects have been used due to the heterogeneous nature of TBI, with features such as etiology (e.g., open vs. closed head injury [Grafman & Salazar, 1987]), severity of injury, location of lesion, time post onset of injury, presence of aphasia and/or dysarthria, socio-economic status and level of education all being factors which need to be controlled.

Previous literature examining discourse features of information exchange within interactions has used small groups of TBI subjects interacting with a research assistant or speech-language pathologist (e.g., Coelho et al., 1991; Mentis & Prutting, 1991; Penn & Cleary, 1988; Schloss et al., 1985). Studies using real as opposed to these artificial interactants are rare. Single case studies of TBI subjects in interactions during information giving and requesting exchanges are also relatively rare (Braunling-McMorrow, Lloyd & Fralish, 1986; Giles et al., 1988; Mentis & Prutting, 1991 ; Schloss et al., 1985). Designs have ranged from simple descriptions of a single case compared with a matched control to multiple baseline across behaviours (Schloss et al., 1985) and a within-subject AB design where subjects act as their own control (Braunling-McMorrow et al., 1986). Similarly, the overall structuring of texts has been investigated using a combination of single case and group methodology (Chapman et al., 1992; Coelho, 1995; Liles et al., 1989; McDonald, 1993).

1.3.2 TBI Subject selection

There is no consensus on subject selection for discourse studies following TBI, which makes comparison across studies difficult. One method is the use of measures of severity such as the level of functioning on the Ranchos Los Amigos Scale of Cognitive Functioning (Hagen, 1984). Subjects have been selected

according to a rating of V which is classified as confused, inappropriate and non-agitated (Liles et al., 1989) to VII or above which is classified as automatic and appropriate, where a patient appears appropriate and oriented within hospital and home settings but may have shallow recall of activities and impaired judgement (Coelho et al., 1991; Coelho et al., 1995; Hartley & Jensen, 1991; Penn & Cleary, 1988). Sustaining a severe TBI as evidenced by length of coma or having sustained a diffuse cerebral injury was sufficient reason for subject selection in Ehrlich (1988). Other studies have also specified the length of time subjects were in post traumatic amnesia (PTA) and/or the time since they have emerged from this state (Bond & Godfrey, 1997; Linscott et al., 1996; Penn & Cleary, 1988; Snow, Douglas & Ponsford, 1995; Snow et al., 1997).

A description of subjects has also been used to justify selection for detailed analysis of discourse performance. For example Liles et al. (1989) chose subjects based on a recovery of high levels of language functioning with evidence of fluent discourse and with no deficits on traditional clinical language tests. Hospital staff perceptions or descriptions have also been used for the process of subject selection. Giles et al. (1988) reported that their subject engaged staff in empty conversation with a failure to get to the point. Glosser & Deser's (1990) subjects were chosen according to judgments by the rehabilitation team of a fluent

language disorder. Braunling-McMorrow et al. (1986) chose their three subjects following staff reports of social deficits including lack of initiative, failure to respond to and give criticism appropriately and self centredness in social interactions.

More recently, the neuropsychological profiles of subjects have been described although subjects are rarely selected based on cut-offs on these profiles (e.g., McDonald, 1992, 1993; Turkstra et al., 1995). An exception to this is Coelho et al., (1995) who specified that subjects were required to score 75 or above on the Galveston Orientation and Amnesia Test (Levin, O'Donnell & Grossman, 1979) and 125 or above of the Dementia Rating Scale (Mattis, 1976). In most studies, however, the neuropsychological profiles are provided in order to provide a clearer description of subjects, rather than being a criterion for subject selection.

The predominant criteria for subject selection in TBI discourse studies are those of exclusion rather than inclusion. These include no previous history of neurological or psychiatric disorder (Bond Chapman, Levin, Matejka, Harward & Kufera, 1995; Hartley & Jensen, 1991; Linscott et al., 1996); no difficulty with visual acuity or other sensory disorders (Hartley & Jensen, 1991; Liles et al.,

1989; Penn & Cleary, 1988); no aphasia (Coelho et al., 1991, 1995; Liles et al., 1989; McDonald, 1993; McDonald & Pearce, 1995; Perkins, Body & Parker, 1995) and no motor speech disorder (Coelho et al., 1995; Liles et al., 1989; Penn & Cleary, 1988; Snow et al., 1995, 1997). In some studies however, subjects had aphasia (e.g., Hartley & Jensen, 1991; Mentis & Prutting, 1987, 1991; Penn & Cleary, 1988) or dysarthria (Hartley & Jensen, 1991; Turkstra et al., 1995) and in others the presence or absence of these impairments was not noted (e.g., Bond & Godfrey, 1997; Ehrlich, 1988; Linscott et al., 1996). While some discourse measures can be appropriately assessed in the presence of dysarthria (such as cohesion or story structure) the presence of aphasia may significantly affect performance on these measures. Similarly, presence of dysarthria may compromise measures of productivity such as words per minute (Coelho, 1995).

1.3.3 Control subject selection

TBI occurs mainly to young males in the 17-30 age group (Bond, 1984). TBI subjects have been reported to present with a higher than average rate of anti-social behaviour and to be generally academically lower than average premorbidly (Haas, Cope & Hall, 1987; Rimel, Jane & Bond, 1990). In spite of this, in previous studies, control subjects have typically been university students (Coelho

et al., 1991; Liles et al., 1989) or are described as being matched for age, sex and educational/occupational levels (Hartley & Jensen, 1991; McDonald, 1993; Mentis & Prutting, 1987,1991; Milton et al., 1984). This second method of finding controls, while more appropriate than the first, is still flawed because it fails to take into account significant social issues. There are a number of sociolinguistic features which determine the way people communicate with each other. Ethnicity, gender, class and educational levels influence what we say and how we say it across situations (Martin, 1992). Proponents of critical linguistic approaches emphasise the crucial importance of examining socio-economic and cultural factors when analysing communication (Fairclough, 1992). The choice of control group members which are matched with TBI subjects needs to take account of these factors. Unfortunately, many studies of discourse skills following TBI have used university students or hospital employees (Liles et al., 1989; Coelho et al., 1991). Other studies have used poorly described controls (e.g., Mentis & Prutting, 1987) or have failed to use controls at all (e.g., Ehrlich & Barry, 1989; Penn & Cleary, 1988). Using university students as controls contravenes educational status and possibly class. Tate, Lulham, Broe, Strettles & Pfaff (1989) found that of 87 patients with a TBI, 51 (59%) had not engaged in further education upon leaving school, with one third attending college courses, predominantly in the skilled trades and clerical areas.

1.4 Research Questions in this thesis

The research questions addressed in this thesis were initially raised by the clinical impression that people with TBI interacted differently with a therapist in a clinical setting to the way they interacted with their family and members of the community in other settings. It was also apparent clinically that people with TBI were responded to differently by their communication partners than people who did not have a TBI. A critical review of the literature failed to find an empirical investigation of these clinical observations, and furthermore, current discourse analysis techniques did not appear to capture the interactional impairments of people with TBI. Previous work also focused on the person with the TBI being the "problem" in the interaction, rather than viewing communication as a two-way jointly negotiated achievement. This led to the search for a way of analysing the interactions of people with TBI in everyday situations with a level of complexity which would reflect what was happening at a macrostructural level, an information exchange level and finally, at a clause level. As well as assessing different language levels, the effect of varying the social distance and power and social roles within interactions was also of closely related interest. Finally, the contributions of the communication partner were of as much interest as the person with TBI in the examination of the interactional process.

This thesis therefore addresses the issues of whether people with TBI interact differently from people without a TBI and whether communication partners change the way they interact when communicating with a person with TBI compared to someone without a TBI and if so, how they change. To explore these issues, three questions were formulated which investigate three levels of interaction. These are:

1) How does the global structuring differ in TBI interactions compared with control interactions?

2) How does changing the variable of tenor affect the process of information exchange in TBI interactions when compared with control interactions?

3) How do TBI interactions differ from control interactions in the use of lexico-grammatical resources?

How does the global structuring differ in TBI and control interactions?

This question was formulated to evaluate whether interactions involving people with TBI unfold with a different generic structure to control interactions. Global structuring of TBI discourse has focused on narrative texts, however, there has been no research examining the structure of TBI interactions.

In the present research the "structure" was determined by the contextual configuration of each interaction. The contextual variables (i.e., what was happening (field); who was involved (tenor) and the role of language (mode) were realised in the unfolding structure of each interaction according to the generic structure or overall structure.

The generic structure potential in interactions between TBI subjects and normal interactants was contrasted with the generic structure potential of interactions between control subjects and normal interactants. Three aspects of the global structuring were evaluated, including a comparison of:

a) the structure of TBI and control interactions,

b) different types of interactions which varied according to the complexity of information exchange and the relative power of interactants and,

c) information requesting and information giving interactions.

How does changing the variable of tenor affect the process of information exchange in TBI and control interactions?

This question was formulated to test empirically whether information exchange in interactions with people with TBI differed from interactions with control subjects. The way in which TBI subjects exchange information has been the focus

of a small number of studies, however few have varied the tenor of interactions, or examined the contributions of the communication partner and how this impacts on the communication of the person with TBI. This thesis aimed to measure the ability of people with TBI to assume the social roles of patient, son and member of the public. The familiarity of interlocutors was therefore varied but always restricted to the nature of the interaction being sampled. In addition, no instructions were given to communication partners in the present research. The absence of instructions to communication partners on "how to talk" was part of a strategy to ensure a naturalistic communicative exchange. By interacting with different interlocutors, the TBI and control subjects were being evaluated during as close as possible to an everyday communicative activity. Three aspects of the information exchange were evaluated in this thesis including a comparison of:

a) the frequency and nature of information exchange of TBI interactions compared with control interactions,

b) different types of interactions which varied according to the complexity of information exchange and the relative power of interactants and,

c) information requesting and information giving interactions.

How do interactions involving people with TBI and those without differ in the use of politeness markers?

This question was formulated to empirically test whether the use of politeness markers in interactions with people with TBI differed from interactions with control interactants. The wording interactants use has been largely ignored in the study of interactions of people with TBI, possibly because of the assertion that these subjects have mostly intact syntax at the clause level (Hartley & Levin, 1990). The interpersonal construct of politeness in TBI interactions has been studied within Grice's (1975) framework of cooperation and politeness (e.g., McDonald, 1993; Snow et al., 1995), however, it has not been considered in combination with other levels of analysis. Three aspects of the use of politeness markers are evaluated in this thesis including a comparison of:

a) the frequency and nature of politeness marker use in TBI interactions compared with control interactions,

b) different types of interactions which varied according to the complexity of information exchange and the relative power of interactants and,

c) information requesting and information giving interactions.

The method used to operationalise these questions is described in Chapter 2. Detailed explanations of the methodology of the two studies which were conducted are provided. Study 1 required subjects to request information from a range of interlocutors on the telephone, and Study 2 required subjects to give information to school students in a face to face interaction and also to request information from the researcher. Chapter 2 also describes the three analyses used and subject details, statistical analysis and reliability data are provided.

Chapters 3 and 4 provide results which answer the first research question regarding the global structuring of interactions. Chapter 3 outlines results for the global structuring of service encounter interactions in Study 1, where subjects were requesting information. Chapter 4 outlines results for the global structuring of the two interview interactions in Study 2. Results are discussed at the end of each of these chapters.

Chapters 5 and 6 provide results which answer the second research question regarding the exchange of information in TBI interactions. Chapter 5 outlines the exchange structure analysis results for Study 1 which are then discussed in the light of TBI literature, SFL and critical linguistic theory. Chapter 6 provides the results of exchange structure analysis in Study 2 where subjects were

providing information to students and requesting information from the researcher. Once again, the results are discussed at the conclusion of each of this chapter.

Chapters 7 and 8 provide the answer to the final research question which investigates the use of politeness markers. Chapter 7 presents results and analysis of the use of politeness markers for Study 1, and Chapter 8 outlines the results for Study 2. The discussion of results is found at the end of each chapter.

Chapter 9 summarises the clinical implications of the findings of this thesis. There are a number of specific implications for assessment and treatment of the communication of people with TBI and their communication partners arising from this thesis, which are provided in some detail.

Finally, Chapter 10 briefly summarises the issues raised in this thesis, draws conclusions and makes some recommendations for future studies.

Chapter 2

Methodology

2.1 Research Design

The questions described at the end of Chapter 1 are addressed in two independent studies which investigate the interactions of TBI subjects in information requesting interactions on the telephone and in information giving and requesting interactions (Figure 2.1).

Figure 2.1 Outline of Study 1 and Study 2

Study 1 **Information requesting interactions**	**Study 2** **Information giving and requesting interactions**
TBI vs. Controls with	TBI vs. Controls with
1. Bus timetable service providers	1. School students (information giving)
2. Police officers	
3. Mothers	2. Researcher (information requesting)
4. Therapists	

A combination of approaches appears to be most suited to the investigation of interactions of people with TBI (Hedge, 1987). The design therefore allows for the report of group results in combination with single case examples. In some

cases, a deconstruction of extended pieces of text taken from the larger corpus of data was required. All three areas of analysis (i.e., analyses of genre, information exchange and politeness markers) were also viewed together using selected pieces of text to demonstrate the complexity of discourse from a SFL perspective.

The dependent variables in this thesis are frequency measures of information exchange, percentage of moves composing generic structural elements and politeness markers/clause. The independent variables are *presence of traumatic brain injury* (TBI vs. controls, TBI vs. interlocutors, controls vs. interlocutors), *interlocutors* (bus timetable service provider vs. police vs. therapist vs. mother; researcher vs. school students) and *communication role* (TBI and controls as information givers vs. TBI and controls as information requesters).

This thesis reports two studies with two independent sets of subjects. These will be discussed in turn in the following section.

2.2 Study 1 - Information requesting interactions on the telephone

2.2.1 Procedure - Study 1

The interactions sampled in the first study consisted of structured telephone enquiries. It has been reported that discourse abilities after brain injury vary with setting or task (Hartley & Jensen, 1991; Liles et al., 1989; Mentis & Prutting, 1987). The sampling conditions were therefore manipulated so that important factors such as the contact, status and affect between participants and purpose of the interaction could be controlled to produce data which genuinely reflected communication interactions that were as natural as possible (Hartley, 1995).

In the first study, prior to data collection, potential subjects were first videotaped speaking to the researcher in an interview interaction which was then rated by two independent speech-language pathologists to assess subject suitability. If subjects were judged to evidence a pragmatic disability they were then audio recorded on two occasions while making four telephone enquiries, one to the bus timetable information service, one to a therapist, one to their mother and one to the Police Service of NSW. The order in which subjects made the phone calls was randomised. The calls were designed to produce interactions centring on information exchange where the subjects were seekers of information held by the

interactant. A scenario was set up prior to each data collection to facilitate the ecological validity of the call. The scenarios and purpose of each call are summarised in Table 2.1.

Subjects were placed in a secondary knower (K2) role (i.e., the interactant who does not have information) and the communication partners were in the K1 role (i.e., the interactant who holds the information). This type of sampling contrasts with the majority of research completed in this area (see Chapter 1).

Table 2.1 Scenario and purpose of each interaction - Study 1

Condition	Scenario	Purpose of call
Bus timetable	Researcher is organising an outing (for day centre group, or hospital group, depending on subjects) which focuses on facilitating public transport skills, by catching trains and buses around Sydney - TBI and controls subjects are asked to assist by finding out information.	To find out which bus goes from Strathfield station to Macquarie Shopping Centre, to arrive by 12.30 for a lunch outing, and costs involved.
Police	Researcher is currently preparing a talk about returning to driving after a head injury. TBI and control subjects are prompted to call police to find out how to procure a driver's license following suspension as a result of TBI.	To find out how to obtain a license after it has been suspended following a severe head injury.
Mother	Researcher introduces a discussion regarding subjects' current weekly program and asks TBI and control subjects for details. When subjects are unable to recall all details, they are prompted to contact their mother to find out.	To find out the TBI subject's weekly programme.
Therapist	Researcher is currently writing a report for the insurance company, and would like to include information about goals and progress in other areas. TBI subjects are asked about their goals and, if unable to remember, they are cued to contact the therapist involved. Controls are asked whether they know about the areas that their relative/friend is working on, and cued to call the appropriate therapist to find out.	To find out from the therapist (O.T., P.T., Psychologist etc.) what goals are being pursued, and current progress.

2.2.2 TBI Subjects - Study 1

Subjects were five traumatically head-injured adults and five normal adults matched for age, sex and education. A description of TBI subjects can be found in Table 2.2. TBI subjects ranged in age from 25 - 32 years, (Mean = 29 years). Four of the TBI subjects were attending a day centre program which focused on improving daily living skills and social and community integration. One subject was involved in an outpatient hospital therapy program. At the time of their injuries four subjects were employed and one had been studying at university to be a teacher. At the time of the study all were unemployed. Mean time post-injury was 6.4 years, with a range of 1.5 to 11 years. All subjects in the experimental group had sustained a very severe blunt closed head injury (with post-traumatic amnesia >24 hours [Russell & Smith, 1961] and/or loss of consciousness of > 6 hours [Jennett, Teasdale & Galbraith, 1977]). All subjects had emerged from post-traumatic amnesia more than twelve months previous to data collection. Subjects were chosen who had no aphasia and whose speech rate was within normal limits. Further details regarding CT scan results of TBI subjects can be found in Appendix 12.5.

Table 2.2 Demographic and clinical details of TBI subjects - Study 1

Subj. No.	Age	Premorbid occupation	Time since injury (years)	Period of PTA† (months)	Period of LOC* (weeks)	Nature of accident
S1	25	Carpenter	4.25	6	8	Driver in motor car accident
S2	32	Motor mechanic	7.25	>8	>2	Fall from cliff
S3	32	Student teacher	11	2 - 3	8	Pedestrian in motor car accident
S4	29	Apprentice fitter and turner	8	5	10	Motor bike accident
S5	27	Plant mechanic	1.5	1 - 2	1	Driver in motor car accident

* loss of consciousness
†post-traumatic amnesia

To describe the discourse impairments that may follow a TBI it is desirable that subjects are chosen who evidence such an impairment. For this reason some researchers have chosen their subjects based on their performance on pragmatic rating scales (Mentis & Prutting, 1987, 1991) or on social skills rating scales (Linscott et al., 1996). Mentis & Prutting (1987,1991) established that their subjects had a pragmatic communicative disability as measured on the Pragmatic Protocol (Prutting & Kirchner, 1987) as judged by two observers. This method of subject selection has been used in the present research to ensure that TBI

subjects have a communication impairment which impacts on everyday interactions.

Subjects were selected on the basis of evidence of inappropriate pragmatic behaviours, based on ratings by two independent speech-language pathologists (SLPs), as assessed on the Pragmatic Protocol (Prutting & Kirchner, 1987), completed on a videoed conversation with the researcher. The ratings on which both SLPs agreed were used for analysis. Table 2.3 displays the ten behaviours most frequently judged as inappropriate in rank order. For example, all five subjects were judged to have inappropriate prosody, and as this was the most commonly reported problem by both SLPs it was ranked number one. Other paralinguistic factors judged to be inappropriate included reduced intelligibility and difficulty with topic change (4/5 subjects). Verbal aspects of topic introduction and selection and quantity/conciseness were found with three of the five subjects. Difficulty with topic maintenance, reduced vocal intensity, specificity/accuracy problems and flat facial expression were evidenced by two of the five subjects. Table 2.4 shows the number of inappropriate behaviours for each of the subjects. Subjects 4 and 5 were noted by judges to have the largest number of inappropriate behaviours, including difficulties with topic management and cohesion.

The use of Pragmatic Protocol ratings by two independent SLPs ensured that TBI subjects were judged to have a communication disorder which interfered with their everyday communication. The number of inappropriate behaviours noted for each subject indicates that all five TBI subjects demonstrated a communication impairment which would be obvious to most people in the community. This therefore ensured that people with TBI who were experiencing some difficulty in their daily communicative interactions would be the subjects of further study.

Table 2.3 Rank order of top 10 inappropriate pragmatic behaviours for TBI subjects on the Pragmatic Protocol (Prutting & Kirchner, 1987) - Study 1

Rank	Pragmatic behaviour	Number of TBI Subjects
1	Prosody	5/5
2	Intelligibility	4/5
	Topic change	4/5
3	Topic introduction	3/5
	Topic selection	3/5
	Quantity/conciseness	3/5
4	Topic maintenance	2/5
	Vocal intensity	2/5
	Specificity/accuracy	2/5
	Facial expression	2/5

Table 2.4 Number of inappropriate behaviours on the Pragmatic Protocol for TBI subjects - Study 1

Subject	# Inappropriate Behaviours
1	6
2	7
3	6
4	10
5	11

2.2.3 Control Subjects - Study 1

This study sought to improve on the selection of controls in previous studies by using control subjects who were socio-economically closely matched to the TBI subjects. Four of the five control subjects were brothers of the TBI subjects and therefore could reasonably be expected to have a similar socio-economic background. The fifth control subject was a volunteer worker who was of similar age and educational status to the TBI subject. Control subjects were aged 24 - 36 years (Mean = 30 years) and all were male.

2.2.4 Communication Partners - Study 1

The first study manipulates the variable of tenor or the relationship between participants by requiring TBI and Control subjects to engage in four different interactions. The majority of studies investigating TBI subjects' discourse

performance have placed the subjects in interactions with research assistants or researchers (e.g., Mentis & Prutting, 1991; Penn & Cleary, 1988; Snow et al., 1995). One attempt to overcome this involved asking subjects to explain a procedural task by talking into a tape recorder, however this is therefore not an interactional task (McDonald & Pearce, 1995). The conclusions regarding the interactions of people with TBI in these studies are therefore limited to the narrow range of interactants they have studied. These studies have distorted the nature of the discourse because an aspect of the context, the relationships of the interactants, has been lost or distorted.

This study sought to examine variations in tenor, by choosing interactions where the dimensions of status, contact (or social distance) and affect varied. Tenor is concerned with the semiotics of relationships. It mediates these relationships along three dimensions of **status, contact** and **affect** (Martin, 1992). **Status** refers to the relative position of the interlocutors in a culture's social hierarchy, while **contact** refers to the degree of institutional involvement with each other. **Affect** covers what Halliday (1978, p.33) refers to as the "degree of emotional charge" in the relationship between participants. The basic opposition with "status" is between *equal* and *unequal* depending on the social rankings of the participants. "Contact" can be broken down into *involved* and *uninvolved*

depending on the familiarity between participants. Contact is independent of status, as seeing someone often does not change their relative ranking. For example, a doctor and patient do not change rank if they see each other every day, but they do become more "involved" with each other. "Affect" may or may not be manifested linguistically, depending on the status, contact or genre. This may be because participants barely know each other. Issues of status and how they are manifested in language are significant issues for persons with any kind of disability. Where the disorder is itself one of communication, the problem may well be compounded.

The key principle concerning status is **reciprocity** of choice. Equal status between participants is realised by their making the same kinds of choices, whereas unequal status is realised by their taking up different ones. In some cases certain kinds of selections are associated with speakers of higher status and other kinds of choices with speakers of lower status. That is, the realisation of status tends to foreground grammatical options (Martin, 1992, p. 528).

As Poynton (1985) states, the systems of choice are not to be interpreted as meaning that the speakers are making a conscious and deliberate choice from a range of possibilities. These choices are usually made unconsciously. Therefore

choice is a "matter of the options that the language as a system makes available for realising meanings and, in the case of contextual variables, which the society makes available" (p78).

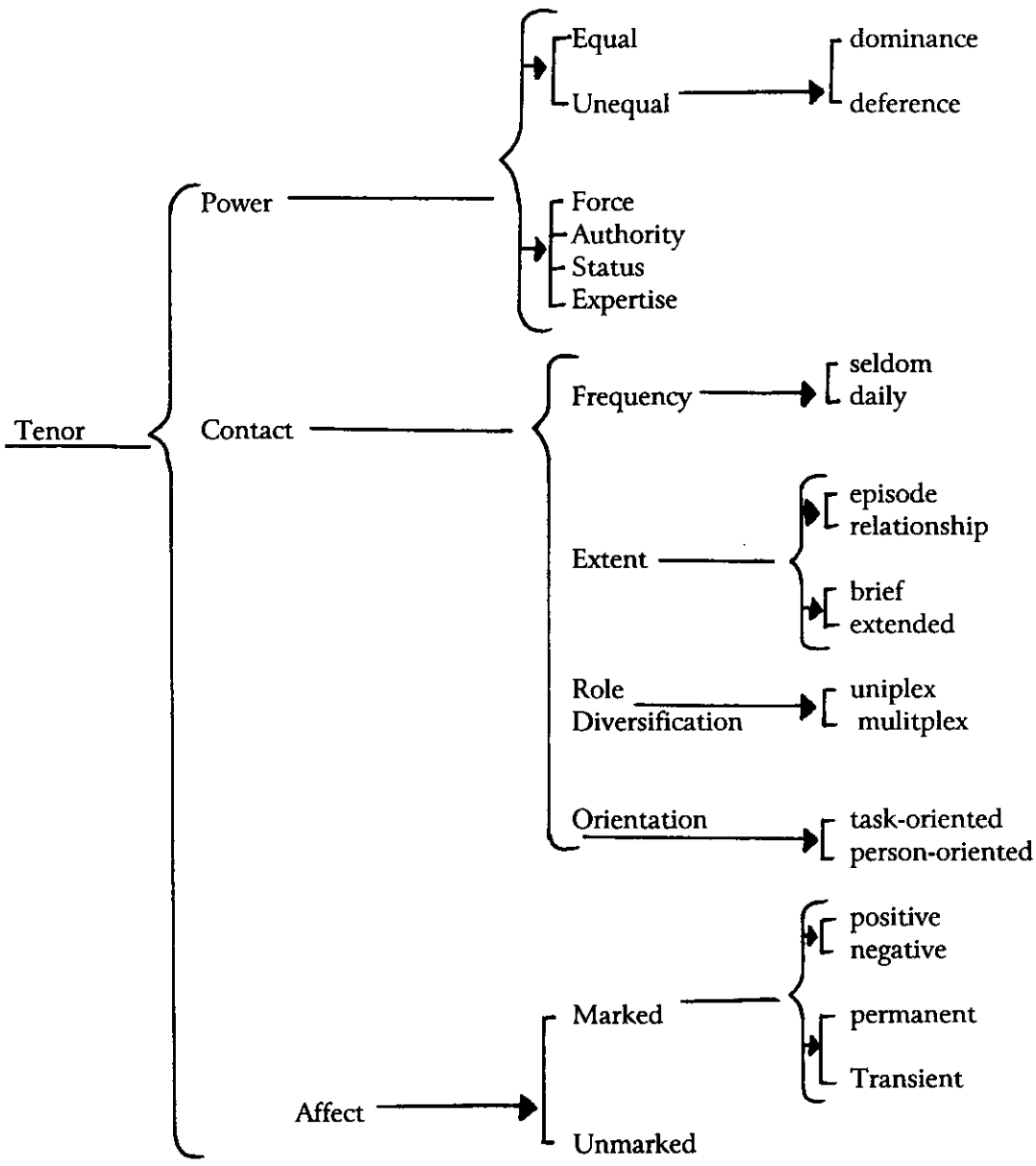


Figure 2.2 Poynton's (1985) model of Register plane : Tenor

The four communicative situations and the interactants involved were the bus timetable information service, the police, therapists and mothers and they will be explained according to Poynton's (1985) model of the register plane of tenor (Figure 2.2 and Table 2.5). The bus timetable information service in Sydney was chosen to represent a service encounter where both the TBI and control subjects would be in what Hasan (1985) called a uniplex (i.e., relating in one capacity only) customer-vendor relationship, giving them some power as a customer, but where their contact would be episodic and brief. Affect (i.e., the attitude or emotion towards the addressee) would be unmarked. In contrast, at the opposite end of the continuum or cline, the police condition was chosen as interactants would be in an unequal relationship, based on the concepts of **force** (where presumably the police officer was at least potentially physically superior with force at his command, i.e., guns, batons etc.); **authority** (which is a function of socially-legitimated inherently unequal role relationships - others include parent-child, teacher-child - in that police here at least potentially had the right to tell the public what to do and enforce it); **status** (which is matter of relative ranking with respect to some unevenly distributed but socially desirable object or standing achievement (e.g., profession/occupation); in this case, where police were at least moderately status-ranked employment, compared with TBI subjects who were unemployed, and **expertise** (which is the extent to which one possesses

knowledge or a skill; in this case, the police had the information the subjects needed). Thus on all four parameters, the police were dominant and the subjects were deferential. In terms of **contact**, police had never spoken to the subjects previously, it was a brief encounter, they were relating to each other in one capacity only (i.e., in a customer-vendor type relationship), and the orientation was primarily towards people. Affect was largely absent although it had the potential to arise during these encounters.

In contrast, the mother and therapist were more likely to be in a dominant position, but have daily or frequent longer term extended contact, be in multiple roles (e.g., the mother could be authoritarian, social companion and personal carer), have person oriented contacts and have both marked positive and negative affect relationships.

Table 2.5 Tenor variables explicated in the four conditions investigated in Study 1 (Poynton, 1985)

Tenor variables	Bus Timetable	Police	Therapist	Mother
Power	Unequal - customer dominant	Unequal - police dominant according to force, authority, status and expertise	Unequal - therapist dominant according to force, authority, status and expertise	Unequal - mother dominant although this could vary
Contact - frequency	Seldom	Seldom	Daily	Daily
Contact - extent	Episode Brief	Episode Brief	Relationship Extended	Relationship Extended
Contact - role diversification	Uniplex	Uniplex	Multiplex	Multiplex
Contact - orientation	Task oriented	Task oriented	Person oriented	Person oriented
Affect	Unmarked	Marked positive and transient	Marked -positive and/or negative and permanent	Marked - positive and negative and permanent

There was a difference in gender across the four groups. Mothers were all female of course, police were male, bus timetable information consisted of eight females and two males and therapists consisted of 1 male and 4 females.

It was considered that these four conditions were a representative sample of communication partners with whom the subjects would interact according to gender, status, contact and affect.

2.3 Study 2 - Information giving and requesting interactions

The second study was developed as a result of the findings of the first study. As TBI subjects were rarely in a position of information giving in the first study (in contrast to the control subjects), the second study was designed to deliberately place them in an information giving (and therefore powerful) role. As well as evaluating whether TBI subjects would be able to assume this role to a similar extent to controls, this study was also designed to demonstrate that subjects could be manipulated from a primarily information giving to information requesting role, and furthermore, that this would be realised at all levels of analysis.

The sampling in these two studies covers a range of genres and interlocutors which have not been previously investigated with TBI interactions. This is a first attempt at quantifying the behaviour of communication partners who communicate regularly with subjects (e.g., therapists and mothers) and also members of the community who had not previously spoken to these subjects. It was also a first attempt at manipulating the role subjects assumed in interactions (i.e., information giving vs. requesting) and comparing how interlocutors varied their communication behaviour when interacting with TBI subjects when compared with controls. The second study also allowed further investigation of

subjects' ability to adjust speaker role to different activities (i.e., giving information vs. asking for information).

2.3.1 Procedure

As with the first study, subjects were videotaped with the researcher in order to select them for inclusion in the study. If judged to evidence a pragmatic disability, subjects were then assessed using the Scales of Cognitive Ability following Traumatic Brain Injury (SCATBI)(Adamovich & Henderson, 1992) over one or two sessions, depending on the time taken to administer this assessment. This assessment was used to provide a description of each TBI subject's cognitive-communication abilities, as well as provide some indication of severity. TBI and control subjects were asked to interact in two conditions in the second study. The first involved subjects interacting with school students in an information giving role, and the second involved subjects asking questions of the researcher regarding the research project; provided an opportunity for subjects to debrief and also for the researcher to thank subjects for attending. TBI and control subjects were involved in a community education project where they provided information to 16 year old high school boys about their disability and the effect it had on their life. This formed part of a driver education and accident prevention program. Two students were chosen by school teachers to

interact with TBI and control subjects after a driver education community education session. Control subjects who had sustained a severe spinal injury were chosen as they were able to discuss similar issues to the TBI subjects with regard to life change as the result of a severe trauma, but were normal communicators. Prior to the recording, the two students were briefed to interview both the TBI and spinal injury subjects and compare them in terms of how the injuries had affected their lives, and their plans for the future. They were told that they would be interviewed afterwards by the researcher to discuss their findings. Each subject was then recorded during a question/answer segment of approximately 20 minutes duration with two students. The order of recording of TBI and control subjects was randomised with each student pair.

The feature of familiarity or social distance was controlled as the TBI subjects and controls were completely unfamiliar to the students. This was in contrast to the first study where these tenor variables were different across the four conditions. The status, contact and affect relationship between interlocutors is crucial in the realisation of linguistic resources (Poynton, 1985). Interactions between complete strangers where there is no apparent inherent purpose or goal have been described as casual conversation (Ventola, 1979). This study was not one of casual conversation as both parties were provided with a purpose for the

interaction to take place. The students were to examine differences between the two subjects (i.e., TBI vs. control) and the subjects were aware that they were in an information giving role. Despite the preset purpose of the interaction, there were some features of these "interviews" which resembled those reported to occur in casual conversation. For example, before information was exchanged, some interlocutors established their social identities by talk which did not address the task at hand. Talk regarding the immediate environment, the student's school and sporting interests and the weather was often interspersed with that related to the purpose of the interaction. Joke telling and recounting personal stories were also a feature. In the second part of this study, subjects were given time with the researcher to ask any questions they may have about the research, results, future plans etc. In this condition, subjects were placed in a requesting role, with the researcher being in the information giving, dominant role. This second condition was also designed to evaluate the ability of subjects to switch roles from information giving to requesting.

2.3.2 TBI Subjects - Study 2

The second study consisted of a group of seven TBI subjects and seven age and gender matched control subjects who had sustained a permanent spinal injury. These subjects interacted in two conditions - the first was to seven pairs of 16

year old school boys and the second was to the researcher. TBI subjects S1 and S3 also participated in Study 1.

Table 2.6 Demographic and clinical details of TBI Subjects - Study 2

Subj No.	Age (years)	Premorbid occupation	Time since injury (years)	Period of P.T.A.† (months)	Period of L.O.C.* (weeks)	Nature of accident
S1	29	Carpenter	7.75	6	8	Driver MVA
S2	30	Factory hand	13	4	10	Pedestrian MVA
S3	35	Student teacher	12	2-3	8	Pedestrian MVA
S4	42	School student	26	NR	20	Passenger MVA
S5	33	Process worker	8.4	3	4	Driver MVA
S6	29	Clerk	12	10	6	Driver MVA
S7	37	Unemployed	7.4	4	1.5	Passenger MVA

* loss of consciousness
† post-traumatic amnesia
MVA = Motor Vehicle Accident
NR = Not recorded in medical file

Subjects were selected on the basis of evidence of inappropriate pragmatic behaviours, based on ratings by two independent speech-language pathologists, as assessed on the Pragmatic Protocol (Prutting & Kirchner, 1987), completed on a videoed conversation with the researcher. Table 2.7 displays the ten behaviours most frequently judged to be inappropriate. These included

intelligibility in 6/7 subjects, quantity/conciseness and topic maintenance in 5/7 subjects and inappropriate prosody, vocal quality, body posture and topic change with 4/7 subjects. The number of inappropriate behaviours for each subject are shown in Table 2.8. Subjects 2, 6 and 7 were judged to evidence the most inappropriate pragmatic behaviours.

Table 2.7 Rank order of top 10 inappropriate pragmatic behaviours for TBI subjects on the Pragmatic Protocol (Prutting & Kirchner, 1987) - Study 2

Rank	Pragmatic behaviour	Number of TBI Subjects
1	Intelligibility	6/7
2	Quantity/conciseness	5/7
	Topic maintenance	5/7
3	Topic change	4/7
	Vocal quality	4/7
	Prosody	4/7
	Body posture	4/7
4	Topic selection	3/7
	Topic introduction	3/7
	Speech act pair analysis	3/7

Table 2.8 Number of inappropriate behaviours on the Pragmatic Protocol for TBI subjects - Study 2

Subject	# Inappropriate Behaviours
1	6
2	13
3	7
4	6
5	8
6	19
7	10

Subjects were also assessed on the Scales of Cognitive Ability (SCATBI)(Adamovich & Henderson, 1992) to provide a basic description of each subject's cognitive-communication ability as well as to give some idea of severity. The SCATBI provides standard scores for five different scales, each of which focuses on a different aspect of cognitive ability. Information regarding these scales can be found in Appendix 12.2. The standard scores all use the same scale (mean = 100, standard deviation = 15) and are based on the same sample, which allows comparison between scores. Scores on the five scales can be found in Table 2.9. The lowest scores for 3/7 subjects were produced on the Recall scale, with the other four subjects producing their lowest score on each of the other scales (i.e., Perception/Discrimination, Orientation, Organization and Reasoning). The Perception/Discrimination scale was the second most difficult

for 3/7 subjects. The highest scores were obtained on the Organization scale for 4/7 subjects and Orientation (3/7 subjects).

The SCATBI Severity Score is a standard score designed to classify overall performance. The score range, which is based on a mean of 10 and a standard deviation of 3, defines performance with a confidence interval of less than 1 score point. That is, differences of 1 or more Severity Score points may be interpreted as significant. The SCATBI Severity Scores range from a minimum of 3 to a maximum of 17 and have been logarithmically divided into five ranges labelled severe (3 to 6), moderate (7 to 9), mild (10 to 12), borderline normal (13 to 15) and average normal (16 and above). Subject 6 produced the lowest SCATBI Severity score which classified him in the moderate severity range, indicating that he performed below the mean but no lower than 1 SD below the mean of the head injured sample in Adamovich and Henderson's (1992) standardization sample. Four subjects (S1, S2, S3 and S5) were classified in the mild severity range which reflects performance in the range from the mean to no higher than 1 SD above the mean of the head injured sample. The final subject (S4) performed in the borderline normal range which reflects performance equal to or higher than 1 SD above the mean for the head injured sample and also between the mean and 1 SD below the mean of the non brain damaged subjects in

Adamovich and Henderson's sample. Therefore all TBI subjects in this study presented with cognitive-communication disorder, with the most severe case being subject 6. This data will be referred to in the discussion of single case data to interpret patterns of results, particularly in Chapter 6. Further details regarding CT scan results of TBI subjects can be found in Appendix 12.5.

Table 2.9 Standard scores and Severity Scores on the SCATBI for TBI Subjects - Study 2

Subj. No	SCATBI Severity†	Perception/ Discrimination ‡ SEM¶ ±3	Orientation SEM ±5	Organization SEM ±4	Recall SEM ±5	Reasoning SEM ±4
S1	10	104	119	86	101	96
S2	12	113	119	119	91	99
S3	10	101	89	119	93	101
S4	14	104	119	129	101	120
S5	10	91	119	115	98	100
S6	8	93	97	98	80	90
S7	12	95	119	115	98	108

† Standard score with a mean = 10, SD = 3
‡ Standard score with a mean = 100, SD = 15
¶ Standard error of measurement with upper and lower limit points

2.3.3 Control subjects - Study 2

Control subjects were seven males who had sustained a significant spinal injury without reported significant loss of consciousness. These subjects were matched with the TBI subjects according to age, gender and premorbid occupation.

These subjects were chosen to complete a similar communication task to the TBI subjects which was to describe the effects of a serious injury on their life. It was therefore necessary for them to have sustained an injury which was significant enough to have effected long term changes to the person's life experience. Control subject characteristics can be found in Table 2.10.

Table 2.10. Demographic and clinical details of control subjects - Study 2

Subject No.	Age (years)	Premorbid occupation	Time since injury (years)	Nature of accident	Level of injury
C1	37	Apprentice electrician	18.2	Trailbike accident	C6†
C2	39	Driver	14	Motor bike accident	T7-8‡
C3	25	Electrician	5.6	Passenger MVA¶	T10
C4	32	Salesman	8	Motor bike accident	C5-6
C5	34	Army	4	Fall from parachute	T10
C6	36	Boner/slicer	12.6	Fall from clock tower	T12
C7	47	Apprentice electrician	27	Spear tackle - football	C4-5

¶MVA = Motor vehicle accident † C = Cervical spinal injury ‡ T = Thoracic spinal injury

2.3.4 Communication partners - Study 2

TBI and Control subjects interacted with pairs of 16 year old boys who were attending a senior high school. With reference to Figure 2.2, in terms of tenor relationships, the boys were in a deferent relationship with the subjects and the contact was brief, episodic, uniplex and unmarked with regard to affect. The second condition in this study required subjects to interact with the researcher. Tenor was characterised by an unequal relationship where the researcher was dominant, but it was also brief, episodic, uniplex and unmarked for affect. The variable being manipulated in this study was that of speaker role - in the case of interacting with the students, subjects were placed in the role of information giver, whereas in the researcher condition they were placed in the role of information requester.

2.4 Linguistic data analysis

Three analyses were used in this research. The three levels provide a view of language use at the level of the genre (which examines the macrostructures of interactions), discourse semantics (at level of exchange and relations between clauses), and the lexicogrammar (or the words and vocabulary used). A more detailed description of the procedures can be found in Appendix 12.1.

2.4.1 Generic Structure Potential (GSP) Analysis

This analysis provides the framework for answering the research questions outlined in Chapter 1, namely, whether interactions involving people with TBI unfold with a different generic structure to normal interactions. The point of using GSP analysis is that it provides a way of describing the structural elements of an interaction according to its purpose and the relationship between the participants. Therefore it has the potential to show us how TBI interactions may differ from control interactions according to the ordering and number of moves which make up each of the GSP elements. GSP analysis examines oral texts as *genre*. The concept of *genre* was borrowed from literary theory and has been used to develop the global structure of interactions in everyday oral texts (Hasan, 1984; Martin, 1985,1992; Ventola, 1979,1987). Genres in literary terms describe typical realisations of particular types of texts (Hasan, 1984; Kress, 1982; Martin, 1985). Some examples of genres include letters to the editor, appointment making, jokes, interviews and service encounters.

The structural elements of a genre are determined by the field (i.e., activity) and tenor (i.e., participants) of interactions. A task such as making a telephone enquiry will vary according to the type of request made, and the participants involved, however there is a common core of structural elements. For example,

the GSP of a simple telephone enquiry, such as finding out the time in another city would be as follows:

Generic elements	Example
GREETING	A: Hello Telstra Australia B: Hello
SERVICE REQUEST	B: Could you tell me what the time is in Boston in America?
SERVICE ENQUIRY	A: Do you mean at the moment? B: Yes
SERVICE COMPLIANCE	A: Yes it's 5 AM
CLOSE	B: OK Thanks very much
GOODBYE	A: Bye B: Bye

The present research looked at two genres including service encounter interactions (part of the telephone requesting study - Study 1) and interview interactions (Study 2). The GSP for service encounters was adapted from Hasan (1985). The interviews were analysed using an adaptation of Ventola's (1979) GSP of casual conversation. These will be discussed in turn.

For both studies, transcripts were first divided into *moves*. A move is a semantic unit of information which is the smallest unit of potentially negotiable information presented by one speaker within one turn of interactive talk (Eggins, 1990). GSP analysis involves scoring groups of moves according to the type of

generic element being expressed. Hasan (1985) developed a formula whereby these elements may be recurring and optional. This allows for analysis of the dynamic nature of spontaneous interactions. This formula and its elements are described in Appendix 12.1.1. The mean percentage of moves in each structural element was computed. Service encounter interactions (i.e., bus timetable information service and police) were analysed using the following elements:

GREETING (GR) Caller and information service provider greet each other

ADDRESS (AD) Caller and information service provider identify selves or ask for identification e.g. "What's your name?"

SERVICE INITIATION (SI) "Can I help you?"

SERVICE REQUEST (SR) Makes primary request for information known to service provider

SERVICE ENQUIRY (SE) Seeks further information or detail regarding initial SR. Can be made by either party

SERVICE COMPLIANCE (SC) Response to request for information and invitation for further requests

CLOSE (CL) Closing remarks - usually interpersonally oriented, e.g. "Is that OK?, Thanks very

	much"
GOODBYE (GB)	Final goodbye "Bye - Bye"
CALL FOR ATTENTION (CALL)	Call for attention from either speaker, either due to lack of response, or because speaker was returning to the phone after suspending conversation
ACTION (ACT)	Statements of action (e.g. I'll just write that down")

In addition, elements were marked as follows:

INCOMPLETE/ INAPPROPRIATE (*)	Inappropriate or incomplete elements either because of delayed responding or a lack of response
UNRELATED (UNR)	Comments or enquiries which are unrelated to the task at hand
PERSONAL COMMENT (PERSONAL)	Comments of a personal nature which, while not directly relevant to the information seeking task, appear to fulfil an interpersonal function (e.g., "You're not nervous about driving are you?")
REPETITION (rpt)	Elements which are repeated due to misunderstanding; failure to take in information or forgetting of information

The genre in the second study represented a combination of information seeking and giving in an interview, with other aspects of a more casual conversation genre. This blending of genres is not uncommon (Hasan, 1994). For this reason, Ventola's (1979) GSP of casual conversation was adapted to reflect the inherent purpose of the interactions (i.e., seeking information regarding the changes to the subject's lives after their accident), as well as to capture the casual conversation component (i.e.,"having a chat" and getting to know each other) which appeared in all interactions. To adapt Ventola's GSP it is necessary to determine how she defined the register variables of casual conversation and then define the register variables of the interactions for the current research. Ventola (1979) defined the three register variables of casual conversation: (1) the *subject matter* functions as a means of establishing and maintaining social relationships. It opens up and keeps open the channel for communication. It establishes personal contact between participants; (2) the *situation type* is a face to face encounter in which verbal interaction takes place; and (3) the *participant roles* are "a constellation of shared learned meanings through which individuals are able to enter stable, consistent and publicly recognised forms of interactions with others" (Bernstein, 1972, p. 144) which are learnt. A person usually has many social roles available in a communicative situation however we have an overriding social role which determines the speech used in particular situations. For example, the social role

which is assumed in a non-hierarchic relationship such as friend-friend is quite different to that in a hierarchic relationship such as teacher-pupil. In addition to participant roles we also have *textual* roles which are required in text making, namely speaker-hearer which are interchangeable and often asymmetrical. These roles are realised through the unfolding of the interaction as measured in the GSP analysis.

In the present study the register variables are summarised in Table 2.11.

Table 2.11 Register variables of the genre in Study 2

REGISTER VARIABLE	DESCRIPTION
Subject matter	
Students	* Determining the life changes following a significant traumatic incident * Differentiating between the effects of spinal versus traumatic brain injury
Subjects	* To provide information and education to school students regarding the effects of their injury on their lives
Researcher	* Determining whether more information is required regarding research project * Thanking subjects for their involvement
Situation type	Face to face encounter in which verbal interaction takes place which was videotaped
Participant roles	
Students	* Information seeking role re changes in subject's lives * Student role (to be educated regarding awareness and prevention) * Stranger - stranger interaction
Subjects	* Information giving role * Teacher role with students - hierarchic * Information seeking role when in researcher interaction * Stranger - stranger interaction with both students and researcher
Researcher	* Information giving role with subjects * "Therapist" role - hierarchic * Stranger - stranger interaction

Following on from this description of the register a GSP was designed based on Ventola's (1979) description. The structural elements which were identified included:

GSP Element	Description
GREETING (GR)	Interpersonal "opening move"
ADDRESS (Ad)	Defines the addressee (e.g. Hello Mary) Indication of role relationship (Mr, Dr vs 1st name)
APPROACH (Ap)	Assists in establishing a comfortable relationship with others Means of getting the conversation going Realised by "safe topics" social niceties, breaking the ice, small talk Can distinguish between two types: Direct and Indirect
APPROACH-DIRECT (Ap-D)	Usually realised by topics which concern the interactants themselves e.g. health, appearance, new clothing, family etc.
APPROACH - INDIRECT (Ap - I)	Refers to the immediate situation (e.g. weather, current news) Approaches function as a bridge to conversation, in this case a bridge to the business of asking for specific information as requested
CENTRING (C)	Realised by cognitive and informative topics The questions and answers which directly relate to the purpose of the interactions (i.e. finding out the details and impact of the injury; giving details about the project)
LEAVE TAKING (LT)	The expression of an interactant's desire or need to terminate the conversation e.g., Well I've got to be going now; Nice talking to you
GOODBYE (GB)	Can be short (Bye) or extended (see you later)

2.4.2 Analysis of exchange structure

Exchange structure analysis taps into how information and goods and services are exchanged. All interactions are based around the demanding and giving of information or goods and services. These are typically realised by the speech functions of statements, questions, offers and commands. Berry (1981) and Ventola (1987) developed this basic system further by examining who in the interaction has the information (or goods and services) and how this is conveyed.

The exchange is made up of "moves", which are the basic units of analysis. A move is a unit of information and an exchange is composed of a sequence of moves. When involved in an exchange, one is either a) requesting or providing information, or b) requesting or providing action. Exchange analysis has two types of moves: *synoptic* moves and *dynamic* moves. When analysing conversational exchanges the abbreviations K1 and K2 are used to refer to the exchange of this information. Exchanges can be initiated by either interlocutor. Therefore, subjects and their communication partners can be both primary (K1) and secondary knowers (K2) in different exchanges. Synoptic moves are denoted by brackets and dynamic moves are marked with arrows. The following example shows an exchange consisting of a request for information (K2) by the control subject and provision of information (K1) by the bus timetable person, ending with a follow up move (K2f).

Example 2.1. Control Subject C3 - Bus timetable condition
Moves 117- 119 C = Subject B = Bus timetable person

117	K2	C : So I really suppose it wouldn't be more than two dollars?
118	K1	B : Well your bus is going to cost them a dollar twenty each way
119	K2f	C : Right

Exchanges of information are not always this smooth. Speakers have available a set of dynamic moves which perform the function of negotiating meanings such as checking or clarification. A comprehensive list of the various types of dynamic moves are listed in Appendix 12.1.2. In Example 2.2 we have two exchanges of information which are made up of an information giving exchange (moves 19 - 22); and an information requesting exchange (moves 23-29). Dynamic moves of confirmation (cf) and responses to confirmation (rcf) are also used, possibly to assist the subject to remember the information being given to him or her, as well as backchannelling (bch) which is another kind of dynamic move which is important for the flow of information during telephone calls.

Example 2.2 Control Subject C4 - Police condition
Moves 19 - 29 C = Control Subject P = Policeman

19	K1	P : I mean if you contact their head office at Rosebery
20	cf	C : Head office at Rosebery, yeah
21	rcf	P : Yeah mate
22	K1	P : they'd be able to give you all the info you'd need
23	K2	C : Alright could I get that phone number?
24	K1	P : Mate I haven't got it unfortunately
25	cf	C : Oh you haven't got it
26	K1	P : If you look them up under the Roads and Traffic Authority, you'll come up [their head office mate down at Rosebery
27	bch	S : [yeah
28	K1	P : And they'll be able to give you a hand from there

29 └ K2f S : Alright then

Synoptic moves consist of K1, K2, K1f and K2f moves during exchanges of information. If the request or receipt of action is occurring, the exchanges are made up of the synoptic moves of A1, A2, A1f and A2f (see Appendix 12.1 for examples). The interactions which were the subject of interest in this study were primarily exchanges of information, therefore K1, K2 and the follow up moves of K1f and K2f were the primary synoptic units of analysis.

K1 moves

The K1 move serves to provide information to the other person. When making a K1 move, one is termed the "primary knower". The primary knower is someone who already knows the information (Berry, 1981). The tasks in this study required the communication partner in the interaction (e.g., the bus timetable person or the therapist) to assume this role, as they were being asked for information. Being the primary knower frequently during an interaction has been associated with being in a more powerful position in that interaction (Poynton, 1985). The primary knower must make a contribution (i.e., it is an obligatory element of the exchange structure) if an exchange is to occur (Berry, 1981). Thus, the K1 slot is where the primary knower indicates that they know the information and where they confer the information with a "kind of a stamp

of authority" (Berry, 1981, p. 127).

K2 Moves

The "secondary knower" in an interaction is someone to whom the information is imparted (Berry, 1981). Secondary knowers fill the K2 slot in an exchange. Interactants are in the K2 role either because they are directly requesting information or because they are receiving information. The subjects (both TBI and controls) were required in the tasks set for them to assume the K2 role to request specific information. This provides a measure of success in requesting information. Being placed in the K2 role has been described as being in a less powerful position (Poynton, 1985); however, the ability to ask questions has also been described by others as a powerful conversational strategy (Cameron, McAlinden & O'Leary, 1989; O'Barr & Atkins, 1987). The different contexts of questions affect the power they have, but don't necessarily exceed the power of being in the K1 role. Analysis of K2 moves therefore needs to take account of the context in which they occur.

The sequence in which K1 moves and K2 moves can occur has been expressed as an algorithm, which has been adapted by Ventola (1987). For an information exchange this formula is as follows:

((dK1) K2) K1 (K2f K1f))

This shows that K1 is the only obligatory element for an exchange of information to occur. Each element, if it appears, must appear in the given order. The elements within the brackets are optional. So, for example it is possible to have a K2 K1 exchange, or a K1 K2f exchange, but it is not possible to have a K2 move in isolation. dK1 represents a delaying move, where the person is asking a question that they already know the answer to, most commonly seen by teachers in classrooms, (Sinclair & Coulthard, 1975). The "d" stands for "delayed", as the real K1 move does not occur until the end of the exchange. This is typical of teaching interactions. For example :

Example 2.3 TBI Subject S1 - Mother condition
Moves 15 - 17 M = Mother S = TBI Subject

15	dK1	M : and what did you do on Mondays?
16	K2	S : Wasn't that the day, that afternoon we went to the swimming pool?
17	K1	M : Yes..That's right

Dynamic moves

Dynamic moves are used to facilitate the negotiation of meaning, either actively (such as clarification or checking), or by giving feedback that the information has been conveyed successfully (by confirmation or backchannelling). Dynamic moves are used when the information exchange process is challenged or when interactants misunderstand each other (Appendix 12.1.3).

By examining exchange structure at the level of discourse, it is possible to measure how interactants are using language during the information exchange process. The choices that are made depend on the context of situation, and the context of culture surrounding that interaction. The language choices made can be interpreted in the light of interpersonal factors such as social distance and perceived authority.

This analysis was chosen as it can show us who is in charge of the information during an exchange, and how this information is transferred. As conditions were varied according to social distance and power imbalance, the person with TBI's ability to adapt to this variation can be evaluated.

2.4.3 Politeness marker analysis (mood and modality)

It has been suggested that people with TBI may have problems with the conventions of social interaction as described by Grice's (1975) rules of cooperation and politeness. Using this framework it has been found that the majority of errors for TBI subjects fall within Grice's maxims of Quantity and Manner (McDonald, 1993; Snow et al., 1995). These studies have described TBI subjects' difficulty with the propositional content of language, however, the

expression of *politeness* within interactions remains to be explored. A notable exception to this was McDonald (1992) who asked two TBI subjects and two matched controls to formulate polite requests (such as asking a stranger the time). Both subjects were able to complete these tasks with adaptive and effective responses. When the demands of the task were increased by insisting that requests were made in the form of hints, the TBI subjects were unable to comply. It was concluded that frontal lobe impairment, particularly loss of abstraction ability and disinhibition, disrupted the ability to generate and communicate non-conventional indirect meaning.

Politeness has been described from a number of perspectives. Lakoff (1974) observed that sociocultural goals, broadly called politeness, lead people to express opinions and preferences in widely varying linguistic forms. Early proponents of pragmatics, such as Searle (1975) and Austin (1962) describe a separation between the illocutionary force and the propositional content of an utterance. They cite indirect speech acts as examples of this separation. Brown and Levinson (1978, 1987) argue that the form taken by utterances during interactions can be seen as the linguistic means of satisfying the coexisting and often conflicting needs for negative face (the need to be let alone) and positive face (the need to be approved by others). As a result, people often prefer to express their opinions

off the record - that is, indirectly. The underlying social need to establish and maintain face depends on aspects of the context such as social distance and power as well as culture. Other approaches dissociate particular features of language as being politeness markers (Stubbs, 1983). Some of these markers include negative polarity, the use of the modal form of the verb and indirect forms.

Varying degrees of subtlety in expressing politeness might therefore be problematic for TBI subjects. However analyses tend to treat politeness as an issue somehow separate from other aspects of language and there is a need for a more linguistically integrated and sophisticated way of analysing politeness in discourse.

Therefore, in addition to analysing the way information was exchanged and the way global structuring of the interactions unfolded, a third analysis was completed which investigated the lexicogrammatical resources of subjects and their communication partners. Mood and modality analysis provides some insight into the language choices that are made at clause level, by examining the degree of "definiteness" in an interlocutor's utterances (Halliday, 1985; Martin, 1992). It also refers to the way requests are made and how the answers are

phrased, by taking context into account (Halliday, 1985). SFL describes a system of choices which may be activated if either speaker is attempting to preserve the other's face in an interaction (Brown & Levinson, 1987). This may be realised in two major ways. Firstly, the system of *mood* provides different speech function choices to express meanings. That is, clauses are analysed according to the types of speech functions they represent (such as Yes/No tag questions, Wh-Interrogative questions, declaratives, imperatives). For example, the analysis of mood can be used to examine the wording that is being used during a therapy session. If a female therapist wanted to stop a patient with TBI from talking so that she could have a turn, she can use a range of speech functions to realise this. She could use a **command**, realised through the imperative speech function, such as "Stop talking now". This is a fairly abrupt way of achieving her aim so she might make another choice such as a **question**, which is realised with an interrogative, such as "Would you stop talking now?" Note that this is not a real question as it does not require a response. Either the person stops talking or they continue, which would signal potential conflict. Another way to stop the person talking could be to make a **statement** which is usually realised by a declarative such as "I can't concentrate on what we're doing while you're talking". This grammatical structure typically is used for information giving, but in this case it is not used to give information but to stop

the patient from talking. By using some of these indirect structures to get her meaning across, the therapist is able to express her meaning in "ways that can be highly sensitive to contextual constraints" (Eggins, 1994; p.121). Halliday (1985) refers to these types of structures as examples of "grammatical metaphor".

The other way to use language to reflect the context interpersonally at the level of lexicogrammar is through the system of modality which is part of the mood system. This refers to the area between "yes" and "no". Sometimes, perhaps to be more polite, we may want to "modalise" our utterances. For example, as well as changing the speech functions the therapist above used to make a request, she may have also said "Could you *possibly* stop talking now?" or "*I suppose this might be difficult for you but could* you stop talking now?" In these utterances, the therapist is using finite modal verbs (could, might), a modal adjunct (possibly) and comment adjuncts (I suppose). These are some of the resources described in Halliday's system of mood and modality to lessen the degree between "do it!" and "don't do it!" This system is also used when we are not particularly sure about the information we are giving. Compare the four following utterances:

1. I can't do it.
2. I suppose I might possibly be able to do it
3. I might possibly be able to do it.

4. I can do it.

These demonstrate the range between "yes" and "no" by using the resources of the mood and modality network. Note that the more modality used in an utterance the less certain it is (Halliday, 1985).

So what can this lexicogrammatical system tell us? It can provide significant information about how people with a TBI use these interpersonal resources at the level of the clause to indicate that they are aware (albeit unconsciously) of the relationships set up through the context. If they make requests for information inappropriately, or appear to be abrupt or overly familiar, it is reflected at this level of analysis. Lexicogrammatical analysis can also be used to look at whether the interlocutor is being overly "polite" because the person with TBI obviously has a disability. If so, this may have unpredicted consequences, for example, if a therapist makes an overly modalised request for action, it is possible that the person with TBI will fail to detect the request because of the difficulty of the syntax or the degree of indirectness, and therefore fail to comply. This may end in conflict because the therapist may perceive that the patient is refusing to cooperate, whereas at the same time the patient may be confused because they don't know what is expected of them.

In the present research all transcripts were divided into clauses and analysed using Halliday's (1985) mood and modality analysis. The transcripts were scored according to the following modalisers. These were interpreted as "politeness markers" for this study (Stubbs, 1983).

Politeness marker	Examples
* finite modal verbs	will, would, could, should, might, must
* modal adjuncts	probably, possibly, just
* comment adjuncts	I think, unfortunately
* yes/no tags	He's gone overseas, hasn't he?
* incongruent realisations of the interrogative form	You don't know what time they go or anything?

The total number of politeness markers was divided by the total number of major clauses to give a ratio of politeness markers per clause for each interaction.

2.5 Statistical Analysis

Nonparametric statistical tests were used in this thesis for two reasons. Firstly they are most suitable for small samples and secondly, they make no assumptions about normality and homogeneity of the variance of the population sample (Siegel, 1956). As the population studied in this research was selected, rather than random, with TBI subjects representing a moderate to severe level of impairment, the assumptions made regarding these data are that the observations

are independent and that the variables under study have an underlying continuity (Huck & Cormier, 1996; Siegel, 1956).

It is widely believed that nonparametric procedures are inferior to parametric techniques because the former supposedly have lower power than the latter (Huck & Cormier, 1996). However, given the small samples and the possible violation of the assumptions of normality and homogeneity of variance, the use of nonparametric tests can provide greater protection against Type II errors. The decision to use nonparametric procedures has also been reported to increase the sensitivity in the case of skewed data sets, when compared with parametric techniques (Huck & Cormier, 1996).

Most studies examining aspects of information exchange in TBI interactions have used percentages, raw scores or text examples when reporting results (e.g., Coelho et al., 1991; McDonald, 1993; Mentis & Prutting, 1991; Perkins, 1994) with most providing descriptive data such as means, ranges and standard deviations (e.g., Bond & Godfrey, 1997; Snow et al., 1995). Some studies with larger subject numbers have used parametric procedures (e.g., Glosser & Deser, 1990), although others have varied the use of parametric and nonparametric procedures according to the nature of the data, with nonparametric techniques being used

with linguistic features such as linguistic nonfluencies, revision behaviours and proportions of essential steps in a procedural discourse task (Snow et al., 1995).

The groups were compared using both descriptive techniques (i.e., mean, range and standard deviation) and the following nonparametric tests.

Wilcoxon Matched-Pairs Signed Ranks Test

This test compares two related samples of data, either because groups are matched according to preset criteria (such as age, sex, education), or to compare the same subjects twice. The method used was for small samples (i.e., $N<25$), with significance being determined by comparing a T value against a tabled critical value (Siegel, 1956). This test was used in Study 1 to compare TBI and control subjects' (i.e., matched pairs) use of exchange structure elements and politeness markers across the four conditions of Bus timetable, Police, Therapist and Mother; to compare the interlocutor's use of exchange structure elements and politeness markers with TBI and controls and also in post-hoc testing following the application of the Friedman Test.

In Study 2 the Wilcoxon Matched-Pairs Signed-Ranks Test was used to compare TBI with controls' use of exchange structure elements and politeness markers

across the student and researcher conditions, and to compare interlocutors' use of exchange structure elements and politeness markers across TBI and control conditions.

Mann Whitney U Test

This test compares two groups which are independent and generates a U statistic, the significance of which is compared against a tabled critical value. The method for small samples (i.e., N<9) was used (Siegel, 1956). This test was used to compare communication partners with each other in their use of exchange structure elements and politeness markers in Studies 1 and 2. In Study 1, the Mann Whitney U was also used in posthoc testing following administration of the Kruskall-Wallis One-Way Analysis of Variance, which compared communication partners with each other.

Friedman's Two-Way Analysis of Variance of Ranks

This test is similar to the Wilcoxon test in that both procedures were developed for related samples. The difference is that the Friedman's Test can be used with two or more related samples, with comparisons of ranked data. The method for testing the significance of differences was for N=2 - 9 related samples (Siegel, 1956, p.168) using the table of values for chi square in Siegel (1956, p. 249).

This test was used to compare TBI and control subjects' use of exchange structure elements and politeness markers across interlocutors in Study 1 (i.e., Bus timetable vs. Police vs. Mothers vs. Therapists).

Kruskal-Wallis One-Way Analysis of Variance by Ranks

This test compares whether three or more independent samples are from different populations by comparing ranked data. The method for testing the significance of differences for small samples (Siegel, 1956, p.186) was used with reference to the table of critical values of chi square (Siegel, 1956, p. 249) as there were more than five cases in each group. This test was used to identify whether differences occurred between communication partners in their interactions with TBI and control subjects in their use of exchange structure elements and politeness markers in Study 1.

In the case of multiple comparisons, which increase the likelihood of a Type I error, the Bonferroni adjustment was applied which yielded a more stringent alpha level (Huck & Cormier, 1996, p. 207). Significant findings were also limited by small sample sizes, particularly when scores were tied. Keeping these limitations in mind, the statistical comparisons did illuminate some differences between groups as well as patterns of difference between interlocutors. It should

be noted, however, that these statistical comparisons were combined with descriptive statistical data and qualitative interpretations of findings, to enable a complete consideration of the findings.

2.6 Test instruments

Two test instruments were used in this research: the Pragmatic Protocol (Prutting & Kirchner, 1987) and a standardised test of cognitive-communicative abilities following TBI (used in the second study only). The standardised test was administered in the second study within two weeks of experimental data collection. All TBI subjects were assessed using the Pragmatic Protocol before inclusion in the study as a screening tool.

The Pragmatic Protocol was originally designed to document various language-disordered populations' pragmatic abilities. The protocol consists of 30 pragmatic aspects of language that include areas such as speech acts, topic, turn taking, lexical selection, paralinguistic aspects and nonverbal aspects. Each of these aspects are judged according to whether they are appropriate (i.e., the behaviour facilitated the interaction or was neutral) or inappropriate (i.e., the behaviour detracted from the interchange and penalised the speaker). To assess the individual using this protocol, a video is made of an unstructured

conversation covering at least 10 minutes. Raters then use the protocol to guide them during a viewing of the video tape to identify behaviours that penalise the individual or facilitate the interaction. This protocol has been used to describe the performance of TBI subjects when compared with controls (Milton et al., 1984), as part of a battery of assessments for TBI patients (Hartley & Griffith, 1989; Milton & Wertz, 1986) and to facilitate the clinical observation of their clients' progress during a group treatment program which concentrated on pragmatic skills (Ehrlich & Sipes, 1985). The Pragmatic Protocol has also been used to select subjects suitable for further study of their discourse, as in this study. Mentis & Prutting (1987) studied cohesion strategies during conversational and narrative conditions in three subjects with TBI and three matched controls. All subjects were required to evidence a pragmatic disability which was determined using the Pragmatic Protocol. Subject selection was also dependent on a pragmatic disability in a study of topic management following TBI (Mentis & Prutting, 1991). Their TBI subject had problems with topic maintenance, turn-taking pause time, turn-taking quantity/conciseness, specificity/accuracy, cohesion, vocal quality and prosody on the Pragmatic Protocol. Judgments were made by two observers with high inter-rater reliability reported.

The Pragmatic Protocol was therefore chosen as a screening instrument to select subjects for the present investigation. All subjects were videotaped during an interview interaction with the researcher for approximately 20 minutes. The interaction consisted of open ended questions by the researcher regarding the subject's current activities and future plans. Videotapes were then rated by two independent speech-language pathologists using the Pragmatic Protocol. Subjects who participated in the study were judged to have a pragmatic disability. One subject recruited for the second study did not progress past this stage as he was not judged to evidence a pragmatic disability on the Pragmatic Protocol.

The second assessment that was used was the Scales of Cognitive Ability for Traumatic Brain Injury (SCATBI)(Adamovich & Henderson, 1992). The SCATBI provides a description of cognitive- communicative functioning which can be valuable when interpreting an individual subject's performance on various discourse measures. Subjects in the second study were assessed to provide a basic description of range and severity of cognitive-communicative disabilities (refer to Appendix 12.2 for a brief description of this test). This test consists of five scales which are designed to measure different aspects of cognitive-linguistic performance. The scales are organised around five cognitive areas: Perception

and Discrimination, Orientation, Organization, Recall and Reasoning. The SCATBI was used in external validity testing of the ASHA FACS, a measure of communication disability (Frattali, Thompson, Holland, Wohl & Ferketic, 1995). The ASHA FACS assessment domains include areas such as Social Communication, Basic Needs and Daily Planning. The SCATBI was found to correlate moderately with the ASHA FACS.

This combination of the Pragmatic Protocol and SCATBI results provides an overall profile of the pragmatic disturbances as judged by others and cognitive-communication impairments as measured on a standardised test instrument. This provides a sound basis to both select appropriate subjects and describe their cognitive-communicative impairments.

2.7 Equipment

Telephone interactions were recorded on a Voca-Phone telephone answering machine. The videorecordings were made using a National Panasonic VHS video camera which was placed on a tripod. Audiotape recordings were made using a Sanyo Memo-Scriber TRC 9100 audio cassette recorder. The standardised test used in Study 2 (SCATBI) was a published version (Adamovich & Henderson, 1992).

2.8 Ethical Considerations

Both studies in this research were granted ethical approval by the South Western Sydney Area Health Service Human Ethics Committee (Reference Nos. 92/87 and 95/95) and The University of Sydney Human Ethics Committee (Reference Nos. 92/11/3 and 95/12/23). This research was conducted in accordance with the National Health and Medical Research Council Statements on Human and Animal Experimentation. In Study 1 subjects were chosen by the researcher from the community caseload of the former Lidcombe Head Injury Unit (now the Liverpool Brain Injury Rehabilitation Service) following compliance with inclusion and exclusion criteria described above. In Study 2 subjects were chosen in collaboration with staff from the Adult Development Program, The Volunteer Centre of New South Wales and Spinesafe (a community education organisation). Once identified as possible subjects, the researcher sent written information which explained the requirements of their participation (see Appendix 12.3).

The researcher then met with subjects and verbally explained the process which would take place. Subjects were asked to give written consent at this first meeting. At this time subjects were assured of the confidentiality of audio and video tape recordings and transcripts by using initials on transcripts and evidence

of identity being deleted from recordings (e.g., erasing sections of tape where the subject's name was said). In the case of telephone interactions, informed consent was required by law from both parties. The project required that both speaker and hearer give informed consent before any telephone interactions were recorded. As per the Telecommunications Interception Act (1991), a telephone answering machine was used which had an Austel permit. This handset sent a beep down the phone line every 15 seconds to remind both interactants that they were being recorded. The person to be phoned was contacted prior to the procedure taking place to give verbal consent. Subjects were also assured that data would be kept in a locked metal cabinet in a locked office and would only be used for the purposes of research and restricted educational purposes. Subjects were reminded that they could terminate the recordings at any time or have them erased if they wished. Subjects were also asked for consent for the researcher to access their medical records.

2.9 Reliability

The behaviour analytic approach to assessing reliability has been utilised in this research whereby the researcher and an independent but trained observer recorded the occurrence of target behaviours and compared their records to determine the level of inter-observer agreement (Kearns, 1981). The point-to-

point method has been used in keeping with previous research to information exchange in the TBI population. There have been a range of behaviours assessed using point-to-point reliability including cohesion and coherence measures (Glosser & Deser, 1990; Hartley & Jensen, 1991; Liles et al., 1989; McDonald, 1993; Mentis & Prutting, 1987,1991); identification of story structure/propositional components (Bond-Chapman et al., 1995; Liles et al.,1989; McDonald & Pearce, 1995); rating scale measures which describe discoursal features (Linscott et al., 1996; McDonald, 1993; Snow et al., 1997); response categories in interactions such as providing comments or compliments (Braunling-McMorrow et al., 1986; Coelho et al., 1991; Schloss et al., 1985) and other behaviours such as prompt frequency and turn duration in unstructured interactions (Bond & Godfrey, 1997). Some researchers do not report reliability data (e.g., Giles et al., 1988; Penn & Cleary, 1988; Perkins et al., 1995). This may be related to the descriptive nature of the data analysis.

The analyses used in this research have produced data which can be reliably or consistently rated but at the same time have been interpreted according to their context. Halliday (1985) suggested that the analysis of a text in terms of its grammar is a work of interpretation. Without such interpretation he describes analysis as "facing inwards rather than outwards, characterizing the text in

explicit formal terms but providing no basis on which to relate it to the non-linguistic universe of its situational and cultural environment" (p xvii). The examinations of the data in the present research were therefore achieved through a combination of qualitative and quantitative analysis. Point-to-point inter-observer reliability was established for the three analyses utilised in this research (generic structure potential analysis, exchange structure analysis, and politeness markers). Intra-observer agreement was also carried out on data from Study 1 to check transcription accuracy and results of all three analyses.

Point-to-point agreement was assessed by counting instances of agreements when behaviours occurred, and by not including instances of disagreement (Kazdin, 1977). As Kearns (1981) points out "agreements on errors inflates reliability coefficients" (p.28). Agreement was determined according to the presence of the move, element or politeness marker and also according to the division of the text into larger units of analysis including exchanges and generic structural elements.

For Study 1 exchange structure analysis, generic structure potential analysis and the analysis of politeness markers were assessed for inter-observer and intra-observer agreement. Twenty five percent of the transcripts (which represented TBI and control interactions as well as an example from each communication

partner) were examined by two raters. Intra-observer agreement averaged 89% for the exchange structure analysis, 94% for the generic structure potential analysis and 92% for the analysis of politeness markers with no measure falling below the minimum acceptable level of 80% (Kazdin, 1977).

Inter-observer agreement for all analyses was completed between the researcher and a speech-language pathologist who had previous knowledge of systemic functional linguistic analyses. Training sessions of one hour were completed for each analysis with this speech-language pathologist prior to the transcripts being rated independently. The materials used in these training sessions included a worked example of the analysis and key definitions of the elements/moves/politeness markers to be rated. The average inter-observer reliability of all three analyses is shown in Table 2.12. The inter-observer agreement varied from 82% to 96% for exchange structure analysis; from 80% to 100% for generic structure elements and from 91% to 100% for politeness markers in Study 1 and from 86% to 91% for exchange structure; from 93% to 98% for generic structure and from 75% to 88.5% for politeness markers in Study 2.

Table 2.12 Inter-observer agreement results from Study 1 and Study 2

Analysis	Number of agreements	Number of disagreements	Point by point agreement
Exchange structure - Study 1	203	39	83.9%
Exchange structure - Study 2	578	73	88.8%
Generic structure potential - Study 1	161	17	90.4%
Generic structure potential - Study 2	617	34	94.7%
Politeness markers - Study 1	209	7	97.2%
Politeness markers - Study 2	489	76	84.5%

The analyses used in this thesis are therefore considered to be reliable, both in terms of the accuracy of the data and the consistency with which others would judge the data. Some single case studies are presented in this thesis which are interpreted using critical discourse analysis and systemic functional linguistic perspectives. Such analysis is interpretative in nature and as such has not been included in reliability testing.

2.10 Summary

The research design presented in this chapter has been developed to address the three research questions posed at the end of Chapter 1, namely 1) How does the global structuring differ in TBI and normal interactions? 2) How does changing the variable of tenor affect the process of information exchange in TBI and

normal interactions? and, 3) How do TBI and normal interactions differ in the use of lexico-grammatical resources? These questions have been answered in two independent studies using three SFL analyses. The first question was answered using generic structure potential analysis, the second using exchange structure analysis and the final question was answered using the analysis of politeness markers. Additional interpretation of the data has been made from a critical discourse perspective. These approaches have not previously been used widely by researchers investigating discourse performance following TBI, and few studies have examined the behaviours of the communication partner or the dynamic nature of interactions. Analyses were therefore chosen to describe the dynamic nature of two-way (and three-way) interactions and to capture the variability of discourse performance according to a variation of tenor (i.e., participant roles, status and familiarity) (Studies 1 and 2) and field (i.e., activity) (Study 2).

Previous research has indicated that people with TBI have most difficulty with interpersonal aspects of communication. As these analyses are sensitive to changes in the contextual feature of tenor they were suitable to reflect the variation of familiarity and social distance of communication partners (Study 1) as well as the speaker role and activity (i.e., requesting information versus giving information)(Study 2). This research has been designed to examine the global

structuring of interactions, the frequency and nature of information exchange and the wording used in interactions with TBI subjects compared with control interactions, in both information requesting and information giving exchanges.

The research design used a combination of group study with single case examples using data from five TBI subjects and five matched controls across four conditions (a sample of 38 interactions) in Study 1 and seven TBI subjects and seven matched controls speaking to two school students and to the researcher (a sample of 28 interactions) in Study 2. Study 1 consisted of specific information requesting interactions on the telephone which were audio taped. Study 2 investigated information giving interactions with school students and information requesting interactions with the researcher which were videotaped and audio taped.

Quantitative measures of language function were used to make comparisons utilising statistical methods and there were also some interpretations made of some subjects' data based on critical discourse theory and SFL. Reliability of data measures was addressed using point-to-point inter-observer agreements between two raters of all analyses. High inter-observer agreement on all analyses indicates that these may be suitable for use clinically as they were easily taught.

Subject selection was made using the judgments of two independent speech-language pathologists using standard measures to ensure that TBI subjects had a pragmatic communication disorder. Results can therefore be considered to reflect the discourse of people with TBI who continue to evidence social communication difficulties long-term post-injury. The use of brothers (Study 1) and people with spinal injury (Study 2) as control subjects also addressed a methodological problem of previous studies whereby university students or hospital employees have been used, and highlighted the importance of taking sociolinguistic and cultural factors into account when choosing control subjects.

As one of the purposes of the research was to focus on the language use of communication partners, the analyses used may enable clinicians to more easily measure this aspect across different situations. Obtaining natural samples of TBI patients' communication with a variety of communication partners has been previously reported to be a difficult undertaking in the clinic. The analysis of telephone interactions with a range of communication partners suggested that this may be a practical way to obtain naturalistic data which is time and cost efficient.

Finally, this methodology extended on previous research using pragmatic/social communication models by a) focusing on a number of levels of analysis which were designed to investigate interpersonal functions of language; b) focusing on the effect of the communication partner's contribution on what was possible for the person with TBI to produce; c) investigating interactions with people in the TBI subject's communicative environment and with whom they would interact intermittently (e.g., community agencies) and often (e.g., their mothers); and d) studying the effect of the speaker role, whether it be to request information or to provide it. The analyses presented in this research are seen to be complementary to other analyses currently available. The communication difficulties following TBI are the result of a complex interplay of features including linguistic, cognitive, behavioural and social factors. All these aspects need to be considered when evaluating how a person with TBI interacts with others. The approach described in this research may provide clinical insight into the interactional difficulties following TBI and the ways in which communication partners may impact on them.

Chapter 3

Generic structure potential analysis results

- TBI and control service encounter interactions

3 Generic Structure in TBI Discourse

This chapter presents the results of generic structure potential (GSP) analysis of TBI and control telephone service encounter interactions. It addresses whether TBI interactions vary in the measurement of the global, or *generic* structuring the realisation of generic structural elements, when compared with controls.

Generic structure potential analysis has been used to describe casual conversation (Ventola, 1979), gossip (Slade, 1994) and service encounters (Halliday & Hasan, 1985; Ventola, 1987). GSP elucidates the linguistic patterning which occurs in spontaneous unstructured contexts, while allowing for an appreciation of the dynamic unfolding of each encounter (Ventola, 1987).

The emphasis in the rehabilitation of clients with traumatic brain injury (TBI) has shifted towards a functionalist perspective, which favours carryover and generalisation tasks, such as telephone enquiries or shopping encounters (Hartley, 1992; Ylvisaker et al., 1992). Previous research has not examined the

way these interactions unfold with TBI subjects which makes it difficult to identify areas of deficit and to evaluate whether a service encounter has been successful. This chapter addresses the question of whether the overall structure of service encounter interactions differs between TBI and control subjects.

3.1 Methodology

In order to examine the structuring of TBI interactions, TBI and control interactions were compared across two different types of service encounter: bus timetable interactions and police interactions. The procedure for data collection is described in detail in Chapter 2. Eighteen transcripts (five TBI subjects and five control subjects with bus timetable service providers, and four TBI subjects and four controls with the police), were divided into moves. A move is a semantic unit of information which is the smallest unit of potentially negotiable information presented by one speaker within one turn of interactive talk (Eggins, 1990). GSP analysis involves scoring groups of moves according to the type of generic element expressed. The mean percentage of moves which composed each structural element was computed. The measures which will be reported in this chapter are derived from Ventola (1987). These include:

Mean percentage of moves in each GSP element

Mean percentage of aberrant moves within each structural element

Elements unique to TBI interactions

Comparisons were made between TBI and control subjects across the two conditions (bus timetable and police) to answer two of the research questions at the end of Chapter 1. The first of these addresses how global structuring of interactions differs in TBI and control interactions, and the second, whether TBI and control interactions are structured differently according to different complexity of the information exchange and the relative power of interactants. The first question is answered by comparison of TBI and control interactions. The second question is answered by a manipulation of the complexity of the interaction and a variation in tenor. This is realised through two differences between the bus timetable interaction and the police interaction. Firstly, the enquiry is more complex in the bus condition than the police condition, and secondly, the police are in a more powerful position than the bus timetable service providers.

3.2 Generic Structure Potential in Telephone Service Encounters

The mean percentage of moves which make up each generic structural element in TBI and control interactions are shown in Table 3.1 for bus timetable and police conditions. In addition, the number and percentage of aberrant moves occurring within each structural element in the TBI and control interactions across bus timetable and police conditions are shown in Table 3.2. Finally, a summary of the dynamic nature of the unfolding of GSP elements is shown in Appendix 12.4.1-12.4.2.

Table 3.1 Mean percentage of moves by TBI and control subjects in each element of the GSP network for the bus timetable and police conditions

Elements of GSP	Mean percentage of moves in each element of the GSP			
	TBI SUBJECTS		CONTROL SUBJECTS	
CONDITION	Bus (N=5)	Police (N=4)	Bus (N=5)	Police (N=4)
GREETING	8.0	5.0	4.0	0.5
ADDRESS	0.6	6.75	0.2	3.25
SERVICE INITIATION	0	0.75	0	0.25
SERVICE REQUEST	12.0	13.25	13.0	14.0
SERVICE ENQUIRY	31.0	24.75	42.4	38.5
SERVICE COMPLIANCE	26.0	33.0	29.2	26.75
CLOSING	10.0	9.25	5.2	12.5
GOODBYE	5.0	1.75	4.6	4.25
CALL/ACTION	4.8	2.75	1.4	0
UNRELATED	4.0	2.5	0	0

Table 3.2 Mean percentage of aberrant moves within each structural element for bus and police conditions

Generic structure element	Bus timetable condition		Police condition	
	TBI (N=5)	Controls (N=5)	TBI (N=4)	Controls (N=4)
GREETING	(n=9)	(n=15)	(n=15)	(n=1)
Inappropriate/ Incomplete	56%	0	40%	0
ADDRESS	(n=1)	(n=1)	(n=21)	(n=6)
Inappropriate/ Incomplete	0	0	76%	0
SERVICE REQUEST	(n=20)	(n=34)	(n=43)	(n=97)
Inappropriate/ Incomplete	10%	0	56%	0
Repetition	30%	0	9%	0
SERVICE ENQUIRY	(n=88)	(n=161)	(n=81)	(n=97)
Inappropriate/ Incomplete	0	0	5%	0
Repetition	1%	0	15%	0
Personal	0	0	26%	0
SERVICE COMPLIANCE	(n=71)	(n=65)	(n=114)	(n=54)
Repetition	14%	0	19%	0
CALL	(n=6)	(n=2)	(n=7)	(n=0)
Inappropriate/ Incomplete	33%	0	29%	0
CLOSE	(n=17)	(n=12)	(n=27)	(n=28)
Inappropriate/ Incomplete	12%	0	7%	0
Personal	0	0	22%	0

N = number of subjects; n = total number of moves in each structural element

3.2.1 Bus Timetable Condition

Each element of the generic structure analysis will be addressed separately commencing with the greeting. TBI subjects were involved in longer greeting sequences than controls for both the bus and police conditions (Table 3.1). They also produced incomplete and inappropriate greetings (marked with *), due to false starts, inattention or being overfamiliar (such as "how ya goin mate?")(Examples 3.1 & 3.2). This occurred in 56% of the greeting moves in the bus condition and 40% of the time in the police condition (Table 3.2). The key to the definitions of the generic structural elements and associated abbreviations can be found in Section 2.4.1.

Example 3.1 TBI subject S2 - Bus timetable condition - INAPPROPRIATE GREETING
Moves 1 - 2 B = Bus timetable person S = TBI subject

1	GR	B : Hello Bus and Ferry info line --- speaking
2	GR *	S : Oh hang on a sec What do I ask?

Example 3.2 TBI subject S4 -Bus timetable condition - INAPPROPRIATE GREETING
Moves 1 - 5 B = Bus timetable person S = TBI subject

1	GR	B : Bus and Ferry Info line (unintell.) speaking. Can I help you
2	GR*	S : ..
3		B : Hello?
4		S : Hi
5		B : Hi

The mean percentages of moves in the Service Request (SR) and Service Compliance (SC) elements were similar between TBI and controls; however the nature of these elements differed qualitatively. Inappropriate or incomplete elements (10% of total SR moves) and repetition of elements (30% of SR moves) occurred in TBI interactions, whereas they did not occur in control samples (Table 3.2). Despite this, Service Compliance (SC) occurred in all TBI encounters. The cooperative nature of information exchange is demonstrated in Example 3.3, where the bus timetable person compensates for the incomplete Service Request (SR) by the TBI subject.

Example 3.3 TBI Subject S3 - Bus timetable condition - INCOMPLETE SR, SE BY BUS
Moves 3 - 14 B = Bus timetable person S = TBI subject

3	SR *	S : I'd like some information please concerning buses
4		B : Mm Mm?
		S : Yeah from what station Leanne?(to researcher)
5	SE by B	B : Where are you going?
6		S : Strathfield station
7		B : Chatswood?
8		S : No from Strathfield
9		B : [Strathfield mm
10		S : to the Macquarie Centre
11		B : oo (glottal fry) um...
12	SR (rpt)	S : What bus would I take from Strathfield station
13		B : [Yeah
14		S : to the Macquarie Centre?

The highly complicated nature of this task required a succinct SR at the beginning of the interaction, and use of numerous Service Enquiries (SE's) to elicit details about the main enquiry. Control subjects demonstrated this pattern with a clear SR, followed by SE's. Control interactions were characterised by a larger percentage of moves in the SE element than in TBI interactions (Table 3.1). SE's were used to clarify and check information, rather than gain further details. Bus timetable people also used SE's to enable them to provide the required information. In the case of one TBI subject (S2), the bus timetable person initiated most of the SE's, with S2 making only one SE. All subjects negotiated the Close/Goodbye element; however, in TBI interactions, these elements were longer than in the controls (Table 3.1). Example 3.4 demonstrates this, with S2 engaging in a prolonged farewell sequence.

Example 3.4 TBI subject S2 - Bus timetable condition - EXTENDED CLOSING SEQUENCE
Moves 99 - 108 B = Bus timetable person S = TBI subject

99	CL	B : Great OK then.
100		B : Alright well that looks like that should do the trick.
101		S : Yeah and that means you're a very tricky bloke
102		B : That's right (laughs)
103		S : Thanks a lot for your help
104	CL	B : OK Well have a good day
105		S : I hope you do too
106		B : Thank you very much
107	GB	S : Bye bye
108		B : Bye bye

Features unique to TBI interactions

TBI subjects demonstrated two further features which did not occur as frequently in control interactions. These were unrelated comments (UNR) (Example 3.5) and the need to call for attention (CALL) (Example 3.6).

Example 3.5 - TBI subject S2 - Bus timetable condition - UNRELATED COMMENT
Moves 61 - 70 B = Bus timetable person S = TBI subject

61	UNR	S : Sounds like you've got a lot of paper work
62		B : Yeah we have.
63		B : We've got ah all the buses on computer,
64		B : but we've got the trains on the on you know timetables, yeah,
65		B : so they take a bit of juggling around and keeping in order on your desk
66		S : And if you're going from one to the other
67		B : That's right yeah
68		B : that's right exactly
69		S : You'd wind up getting rid of the paper
70		B : Yes that's right

Example 3.6. TBI subject S5 - Bus timetable condition - CALL FOR ATTENTION
Moves 42 - 45 B = Bus timetable person S = TBI subject

42	SE	B : Right there's one at 11.30 that arrives at 12.18
		(.)
43	CALL	B : Hello?
44		S : Yeah I'm here
45	SE (rpt)	B : Yeah there's one at 11.30 arriving 12.18

3.2.2 Police Condition

The police condition appeared to be more problematic than the bus timetable condition for all TBI subjects, even though the enquiry was a more straightforward one. Difficulties may have been related to the unequal interpersonal relationship in this encounter. All obligatory elements were present in both TBI and control interactions. Similar to the bus timetable condition, however, all TBI interactions exhibited inappropriate or incomplete generic elements.

The GR element of all TBI interactions was marked by the necessity for identification (AD). One of the TBI subjects (S2) gave his name at the beginning of the interaction and in the other three cases subjects were asked for their name by the police officer. Control subjects were never asked for their name but three introduced themselves. In contrast, none of the subjects gave or were required to give their name in the bus timetable condition. This requirement appeared to be a reflection of the unequal tenor relationship in the police condition. The mean percentage of moves in the GR element was greater in the TBI interactions when compared with controls (Table 3.1). Controls negotiated a brief greeting, introduced themselves and then moved directly to the SR, perhaps to establish their credibility early in the call. TBI subjects

negotiated longer GR sequences which were inappropriate and delayed by other elements, such as statements of action. The SR was delayed and inappropriate in all TBI interactions. In some cases the police officer initiated the SR after extended GR sequences.

As the enquiry in this encounter was a relatively straightforward one, it was expected that fewer SE's would occur than in the bus timetable condition. This assumption was supported in control interactions, with fewer SE's occurring in the police condition than the bus condition (Table 3.1). Nonetheless, a larger proportion of SE's occurred in the control interactions when compared with the TBI interactions. TBI subjects used the SE to check on information already provided, while control subjects asked for extra information. Police also used this generic structural element to check that the information they had provided to the TBI subjects was clear (Example 3.7).

Example 3.7 - TBI subject S4 - Police condition - CHECKING BEHAVIOUR BY POLICE
Moves 33 - 38 P = Policeman S = TBI subject

33	SE (by P)	P : You know all that do you?
34		S : Yeah
35		P : [So the main thing
36		S : [I've seen many therapists
37		P : Yeah I suppose you do,
38		S : (laughs)

Elements unique to TBI interactions

In two TBI interactions (S4 & S5), both police and subjects discussed personal topics. S5 made a number of unrelated (UNR) (Example 3.8) and personal comments (PERSONAL)(Example 3.9). Failure to respond to calls for attention were also unique to TBI interactions.

Example 3.8 - TBI subject S5 - Police condition - UNRELATED COMMENT
Moves 81 - 95 P = Policeman S = TBI subject

81	SC	P : But the main thing is R. is that it's just gotta go through the Commonwealth Rehab
82		S : Commonwealth Rehab
83		P : Yeah,
84		P : and ah you know they are, they[provide
85	UNR	S : [I've got a lot of Aboriginal mates
86		P : Yeah
87		S : In the service
88		P : Yeah, oh yeah
89		S : Ah, they're older men
90	SC (rpt)	P : Yeah and just go to Cumberland College for the test
91		P : and [then you're right
92		S : [Cumberland College
93		P : Yep,
94		P : and then you're right
95		P : you will get a driver's license

Example 3.9 TBI subject S5 Police condition - PERSONAL COMMENT
Moves 104 - 114 P = Policeman S = TBI subject

104	SE (PERSONAL)	P : But you're not nervous are you?
105		S : Um not at the moment no
106		P : No you'll be [right
107		S : [I'm not in any trouble
108		P : No no no [no
109		S : [I'm used to being in trouble
110		P : But you'll be right
111		P : just take your [time
112		S : [I was a bit of a bastard of a kid
113		P : Yeah. just take your time
114		P : and be careful

All TBI interactions were closed appropriately but were qualitatively different to the controls. Control subjects engaged in longer CL and GB sequences than the TBI subjects (Table 3.1). This may be interpersonally driven. Opening and closing elements reflect the development of interpersonal relationships, by initially establishing credibility and finally, by confirming the success of the encounter, as well as encouraging future contact. In all control interactions, the police officer encouraged subjects to call again. The interpersonal relationship was therefore reinforced by a longer closure than in the TBI interactions.

3.3 Discussion

At the beginning of this chapter the question was posed as to whether TBI interactions differed from control interactions with respect to their use of the elements in the GSP framework in telephone service encounters. The GSP of TBI interactions was different to the GSP of control interactions across both conditions. While TBI interactions evidenced the obligatory elements, there were differences in the proportion of moves used to gain the target information. TBI subjects appeared to be less able to judge the interpersonal and content requirements of the two types of service encounters. This was reflected by the prolonged GR sequences in both conditions; the need for repetition and incomplete/inappropriate elements, and shorter CL elements with the police. Possibly, the longer GR sequences in TBI interactions influenced the remainder of their encounters. For example, the prolonged GR sequences in the TBI - police samples may have precipitated the shorter CL sequences, due to a failure in establishing credibility. The police may not have been comfortable with establishing the same type of interpersonal relationship as they did with control subjects. Police behaved differently with TBI subjects, with demands for identification, and requests for personal information in two cases. The presence of inappropriate, incomplete and unrelated elements was unique to the TBI encounters. Milton et al.'s (1984) statement that TBI patients talk better than

they communicate is supported here.

A further question was asked whether differences occurred according to the type of service encounter and the complexity of the enquiry. The GSP was noted to vary between two different types of service encounter. This was related to the complexity and interpersonal requirements of the task. The more complex enquiry in the bus timetable condition resulted in a larger number of SE's than the police condition. The unequal authority status in the police condition resulted in a larger number of moves being devoted to interpersonal elements. The necessity for personal introductions, and provision of personal information in the case of the TBI subjects, and the longer closing elements of the control interactions, indicating solidarity, reflected this.

Finally, it is of interest to know whether GSP analysis gives information regarding the structure of TBI interactions that is not available from currently available analyses. In this study, GSP analysis provided new information about TBI service encounter interactions. It was sensitive to the nature of the service encounter, with regard to the complexity of the enquiry being made, and the interpersonal relationships which were established. Traditionally, telephone proficiency has been measured by a static checklist of features, or a list of

agencies which TBI clients need to contact (Hartley, 1992). Shopping visits are judged with regard to the client's success in finding and procuring items, and being "appropriate" during the service encounter. GSP analysis provides a detailed view of the dynamic linguistic patterns which unfold in these types of encounters. GSP enables one to predict the complexity of structural requirements of a service encounter task, given the choice of communication partner and the amount of goods and/or services being requested. It offers an alternative way of viewing functional tasks, as well as a promising framework for researchers to investigate the elusive communication problems which follow TBI.

3.4 Summary

3.4.1 List of findings

Study 1 - Information requesting service encounters

Investigation	Finding
BUS TIMETABLE CONDITION	
Greeting	TBI > Controls Inappropriate/incomplete in TBI
Service Request(SR)/Service Compliance (SC)/Service Enquiry (SE)	SR and SC similar quantitatively in TBI vs. Controls but differed qualitatively (inappropriate/incomplete/repetition in TBI) More SE's in control interactions than TBI
Close	Longer close for TBI
Features unique to TBI interactions	Unrelated comments Call for Attention
POLICE CONDITION	
Greeting	TBI > Controls Marked in TBI by necessity for identification
Service Request (SR)	Delayed and inappropriate in all TBI interactions
Service Enquiries (SE)	Controls> TBI Different uses functionally in TBI vs. Controls
Close	Controls > TBI
Features unique to TBI interactions	Unrelated comments Personal comments

3.4.2 Conclusions

It has been suggested from a number of different theoretical frameworks that a structure exists when discourse is produced that extends beyond sentence level syntax and semantics (Hasan, 1985; Stein & Glenn, 1979; van Dijk & Kintsch, 1983). In the 1970s, Hasan laid the foundations for a theoretical conception of genre with systemic functional linguistics with her accounts of generic structure. This commenced with her early work on the structure of nursery tales and later the structure of service encounters (Hasan, 1984, 1985). Martin (1992) developed an alternative but complementary theory of genre which was defined as a staged (the meanings are made in steps), goal oriented (texts typically move through stages to a point of closure and are considered incomplete if the culmination is not reached) interactive achievement which realised a social purpose. Martin (1992) refers to the overall staged patterning of texts as the schematic structures. Considerable work has been carried out on the analysis of written genres using this model. Work on spoken genres has included the analysis of service encounters (Ventola, 1987), casual conversation (Ventola, 1979), spoken pedagogic discourse (Christie, 1989; Hammond, 1995) and narratives elicited from a sociolinguistic interview (Plum, 1988). This methodology was the basis for the analysis presented in this chapter. It was hypothesised that TBI interactions would differ from control interactions in the

way the structural elements unfolded. Differences were expected for a number of reasons, including the contribution of the cognitive-communication impairments of the TBI subjects, the failure of TBI subjects to appreciate the varied interpersonal requirements of the tasks, and finally the role of the communication partner in the way the interaction unfolded.

The analyses presented in this chapter have examined the generic structure of two different service encounters on the telephone (i.e., bus timetable information service and the police). The results of GSP analysis suggest that TBI interactions were different to interactions with matched controls. These differences appeared to have been due to cognitive-communication impairments of TBI subjects, as well as the behaviour of the communication partner. For example, it appeared that because police interacted differently with TBI subjects when compared with control subjects, the TBI subjects were not given similar communicative opportunities.

The results presented in this chapter relate only to information requesting service encounter interactions on the telephone. To investigate the effect of placing subjects in a powerful information giving role a further study was undertaken. Study 2 investigated whether TBI interactions unfolded in a different manner to

control interactions, in order to fully answer the first question posed in Chapter 1 regarding generic structuring of interactions. These results are reported in Chapter 4.

Chapter 4

Generic structure potential results in information giving and information requesting TBI and control interactions

4 Generic Structure in TBI Discourse

This chapter presents the results of generic structure potential (GSP) analysis of TBI and control interactions in information giving and information requesting face to face interview interactions. In the previous chapter, the GSP of service encounter interactions was reported, which indicated that TBI and control interactions differed from each other, particularly when a power imbalance existed between interlocutors (i.e., in the police condition).

Study 2 was developed to assess whether the context could be structured to place the person with TBI in a powerful information giving position. By placing subjects in this position the question of interest was whether TBI subjects would be able to assume an information giving to the same extent as control subjects, and moreover whether communication partners who were in a deferent position would respond to both groups in a similar manner. One of the ways to evaluate these questions is to examine the way interactions unfolded according to the generic structure. It was expected that if TBI subjects were enabled by the contextual configuration to provide information to a similar extent as controls,

the generic structure may also resemble that of control interactions. As well as being placed in an information giving role, TBI and control subjects were placed in an information requesting role, during a wrap-up session with the researcher. This enabled comparison of TBI and control subjects in information giving versus information requesting conditions. It also allowed comparison of an interaction where subjects were in a powerful position with one where they were in a deferent role.

4.1 Methodology

To investigate TBI subjects in an information giving role, they were asked to speak to two Year 11 school boys (who were on average 16 years of age) as part of a community awareness driver education program. The TBI subjects were matched with subjects who had sustained a spinal injury. The school students were briefed prior to data collection to compare TBI with spinal injury and the effects these had had on subjects' lives and future prospects by interviewing both subjects. The interviews lasted approximately 20 minutes. This condition therefore placed TBI and control subjects in a relative position of power in the interaction. The information requesting condition consisted of the researcher asking TBI and control subjects during a wrap-up session whether they had any questions regarding the research project. Twenty eight transcripts (i.e., seven

TBI subjects and seven matched controls across two speaking conditions - student and researcher) were scored according to the generic structure elements described in Section 2.4.1. Further information regarding the details of the method can be found in Chapter 2. Four measures were compared including:

Mean percentage of moves within each GSP element
Mean percentage of aberrant moves within each structural element
Elements unique to TBI interactions
Patterning of GSP elements

4.2 Generic Structure Potential in Structured Interviews

The mean percentage of moves in each generic structural element in TBI and control interactions are shown in Table 4.1 for student and researcher conditions. In addition, the number and percentage of aberrant moves occurring within each structural element in the TBI and control interactions across student and researcher conditions are shown in Table 4.2.

Table 4.1 Mean percentage of moves by TBI and control subjects in each element of the GSP network for the student and researcher conditions

Elements of GSP	Mean percentage of moves in each element of the GSP			
	TBI SUBJECTS		CONTROL SUBJECTS	
CONDITION	Student (N=7)	Researcher (N=7)	Student (N=7)	Researcher (N=7)
GREETING	0.4	0.2	0.5	0
IDENTIFICATION	1.0	0.4	0.8	0
APPROACH INDIRECT	22 (13)*	29.5 (25)	14	5
APPROACH DIRECT	18 (19)	35.5 (39)	16	40
CENTRING	58 (66)	31 (33)	67	53
LEAVE TAKING	0.9	4.0	0.5	2
GOODBYE	0.1	0	0.1	0.1

* ( )With S6 removed from analysis

Table 4.2 Mean percentage of aberrant moves within each structural element for student and researcher conditions

Generic structure element	Student condition		Researcher condition	
	TBI (N=7)	Controls (N=7)	TBI (N=7)	Controls (N=7)
GREETING	(n=12)	(n=16)	(n=2)	(n=0)
Inappropriate/ Incomplete	33%	0	100%	0
IDENTIFICATION	(n=32)	(n=26)	(n=4)	(n=0)
Inappropriate/ Incomplete	81%	0	50%	0
APPROACH-INDIRECT	(n=680)	(n=444)	(n=311)	(n=92)
Inappropriate/ Incomplete	12%	0	8%	0
Repetition	9%	3%	7%	0
APPROACH-DIRECT	(n=575)	(n=499)	(n=375)	(n=718)
Inappropriate/ Incomplete	0	0	5%	0
Repetition	2%	0	0	0
CENTERING	(n=1826)	(n=2095)	(n=325)	(n=954)
Inappropriate	1%	0	0	0
Repetition	14%	<1%	1%	0
LEAVE TAKING/ GOODBYE	(n=31)	(n=18)	(n=37)	(n=30)
Inappropriate/ Incomplete	0	0	0	0

N = number of subjects; n = total number of moves in each structural element

4.2.1 Student condition

Each element of the generic structure analysis will be addressed separately commencing with the greeting. The opening sequence or greeting sequence was not always captured on tape as some students greeted the TBI and control

subjects outside the recording room. However, greetings were recorded for four TBI subjects and six control subjects. The mean percentage of moves making up the greeting element was similar for TBI and control interactions (Table 4.1). One of the four TBI subjects (S6) commenced with an inappropriate greeting (Example 4.1), accounting for all the inappropriate greeting moves, whereas greetings were appropriate for the other three TBI subjects (Table 4.4). In the case of S6, the student's greeting commenced with a concrete joke, a feature which he relied on throughout the interaction as an information giving strategy (see section 6.2.1 for further discussion of joke telling). This in itself was not an inappropriate way to begin, as many other speakers also used joking as a strategy early in student interactions to "break the ice". The greeting became inappropriate, however when the joking lead S6 to touch one of the students on the chest. As S6 did not preempt this physical contact, it appeared to take the student by surprise. Thus, the greeting element was markedly inappropriate in this single case, demonstrating that in some cases, TBI group data can mask or exaggerate findings (McDonald & Pearce, 1995). All greeting sequences were appropriate in control interactions. The key to definitions of the generic structural elements and associated abbreviations can be found in Section 2.4.1. and Appendix 12.1.

Example 4.1 - TBI subject S6 - INAPPROPRIATE GREETING
Moves 1 - 7 A&B = Students S = TBI subject

1	Greet	B : So how you doin' mate?
2	joke	S : Me you know how I've been doing?
3	joke	S : You know how I've been feeling?
4	joke	A : I would not know
5	joke	S : With my hands (clicks fingers) - how else can you feel anything?
6	joke	A : (nods)
7	A1	S : I've feel I feel someone with my hands (touches A on the chest) (Laughs) you know

The mean percentage of moves which identified participants in student interactions was similar in TBI and control interactions (Table 4.1). When examining the appropriateness of the identification moves, all were appropriate in the control interactions, however, in one TBI interaction (S6) the identification process was repeated half way through the interaction thus marking it as inappropriate when compared to all other interactions (Example 4.2)(Table 4.2). Identification has been reported to be a mobile generic structural element in casual conversations between strangers (Ventola, 1979)(see Appendix 12.1.2). That is, the identification may precede the Approaches, thus giving interactants a better basis for getting more personal, but it may also follow Approaches where interactants introduce themselves before engaging in any particular topic of the Centring elements. In the present study, the interactants

were introduced to each other at the outset, and in all cases (except for S6), the identification element was not repeated. The reason for S6's repetition appears to be memory difficulties. While this in itself is not inappropriate, the elaborate nature of this introduction and the formal shaking of hands appeared to be excessive. Similarly, S6's request regarding his own identity was superfluous, as the students already knew his name. This was compounded by the fact that S6 used a dK1 lead (teaching) exchange to introduce this information, which is not typical of identification elements.

Example 4.2 - TBI subject S6 - INAPPROPRIATE IDENTIFICATION
Moves 198 - 226 A&B = Students S = TBI subject

198	K1	S : I have a very bad memory you know?
199	K2f	A : (nods)
200	K2f	B : (nods)
201	**Id**	**S : What's your name again?**
202	**Id**	**B : M.**
203	cf	S : M. M-ville
204	rcf	B : Yep
205	A2	B : (extends hand)
206	A1	S : (shakes hand)
207	**Id**	**S : Yours?**
208	**Id**	**A : R.**
209	cf	S : R.
210	rcf	A : Yeah
211	A2	S : (extends hand)

212	A1	A : (shakes hands)
213	A2f	S : no problem (clicks fingers in time)
214	A1f	A : (laughs)
215	A1f	B : (laughs)
216	**dK1**	**S : You know do you know what's my name?**
217	K2	B : JP
218	cf	A : Yep
219	chall	S : No no my real name?
220	K2	B : Oh could I take a guess?
221	K1	S : Oh I suppose you could
222	K2	B : Ah J___ P___ ? (says full name)
223	K1	S : (shakes head)
224	cfrq	B : no?
225	K1	S : J___ P_____ D_____ (says first and last name)
226	K2f	B : (smiles)

An important element in the structure of the student interactions was the Indirect Approach (Ap-I). This establishes comfortable relationships by discussing topics which are "safe" and concern the interactants themselves. These include topics such as the immediate environment (the school buildings, school activities, the surrounding area), the weather and the current news. In comparing TBI and control subjects' interactions with the students, it appears that the mean percentage of moves making up the Ap-I element was greater with

the TBI interactions when compared with controls (Table 4.2). However, this result is skewed as a result of the interaction of S6 with the students. When examining the percentage of moves which made up the structural elements of his interaction with students, 62% of the interaction was composed of Indirect Approaches (Appendix 12.4.3). A large percentage of the moves making up the Ap-I elements in the S6 - student interaction were inappropriate (55%) or repeated (35%). These Indirect Approaches encompassed topics such as the TBI subject's birthday, which was in the week of the recording; his own farting noises, cracking his knuckles, asking for a cigarette, asking about the researcher, and on nine separate occasions the discussion related to the TBI subject interfering with the audio tape recorder. Other Ap-I's related to where the students lived, their immediate future after leaving school and when recess was going to occur. When S6's results are removed from the analysis, the mean percentage of moves in the Ap-I element is similar for TBI (13%) and controls (14%)(Table 4.1). Two control interactions did not show this element at all, whereas all TBI interactions were characterised by at least one Ap-I element.

When examining all TBI interactions, the Ap-I element was characterised by inappropriate comments (12% of moves) and repetition (9% of moves)(Table 4.2). Example 6.10 (Chapter 6) is an example of an Indirect Approach

characterised by topic repetition and an inappropriate intrusion into the purpose of the current interaction. In this case, an inappropriate Ap-I is introduced by TBI subject S3 regarding the subject of selling Coke at the school (Move 410: S: Do they sell Coke here cause we couldn't buy a can of Coke at university?). The TBI subject may have asked this question for two reasons; to further establish his authority/position by referring to his time at university, and secondly, to establish solidarity with the students by discussing a familiar topic (i.e., drinking Coke). It is noted in Section 6.2.1 that this Ap-I was responded to by students incorporating previous topics (such as sport and investing shares) into the current topic, thus removing the abruptness of the topic change. The students may have done this to save the TBI subject's face in the interaction as well as to preserve the power imbalance which existed.

In the control-student interactions there were no instances of inappropriate Indirect Approaches, however in one interaction there was one instance of repetition (Example 4.3). The repeated element was in relation to the topic of the control subject's (C2's) lunch at a nearby hotel just prior to the data recording. This had been discussed at the beginning of the interaction to "break the ice". The function of the repetition of this element appeared to be "filling in time" as both the subject and the students appeared to have run out of things

to say. Following on from this repetition, the control subject overtly brings the purpose of the interaction back into focus (Move 359) which is a Centring element and then reintroduces the topic of awareness and prevention of serious injuries (Move 366), which continues the Centring.

Example 4.3 - Control subject C2 - Student Condition - Repetition of Ap-I, following by Centring
Moves 350 - 376 A&B = Students S = Control subject

350	**Ap-Iα¶2§ (cont'd) (lunch)**	A : It's just down the road
351		B : Just across the road from the TAFE car park
352		S : That's it
353		S : Banksia - the Banksia Bar
354		A : Bankstown Hotel International
355		S : Oh well I just leave it cause I only hadn't had nothing much this morning
356		S : My stomach was rumbling so I thought I'd better go and eat before I go and do this
357		S : I don't know what time I'd finish you know before I could go and XX*
358		A : Yeah
359	**Cα3**	**S : So how how much involved in this are you guys?**
360	**(Today's purpose)**	B : She like she wants to know like she wants wants to know she's gonna ask us I think what the comparison is to compare youse both and just see who's easiest to talk to and who's easy to get on with I assume that's what I think it's about
361		S : mm

362		B : She's doing some PhD something PhD
363		A : On minds XX minds
364		S : Yeah
365		B : Yeah
366	**Cβ3 Awareness/ Prevention**	**S : I imagine that's what we're trying to XX the kids about wearing helmets**
367		B : (nods)
368		S : cause that is the option of being safe and that isn't it
369		B : Yeah
370	**Cη (other subject)**	**S : What happened to this guy**
371		B : Yeah
372		S : He has brain damage
373		S : well if we show happens in a wheelchair but if you put a few of those cases there and put into the photo before and a photo after and you see
374		B : Yeah
375		S : Like he spent two years in hospital he was telling me
376		B : Yeah

* XX=unintelligible ¶ Different Greek letters represent topically dissimilar elements § Numbers represent topically similar elements

In contrasting the examples of repetition of the Ap-I element, it is apparent that in the case of TBI interactions, the students refocussed the topic, whereas in the control interaction, this was realised through the control subject's moves. This

reflects the subtle calibration and monitoring by the communication partner that occurred in TBI interactions that was not as apparent in control interactions.

The Direct Approach (Ap-D) is usually realised by topics which concern the interactants themselves such as their health, their family members and their everyday life. Similar to Indirect Approaches, Direct Approaches also establish a comfortable relationship with others, and assist with getting the conversation going (Ventola, 1979). The Ap-D structural element was realised by a similar frequency of moves in both TBI and control interactions (Table 4.1). There were no instances of inappropriate or incomplete moves within this element, and only 2% of moves were repeated in TBI-Student interactions. The Ap-D served the important function of allowing interactants to introduce topics which were not relevant to the purpose of the discussion, but provided interludes to establish interpersonal links by discussing topics which the students could contribute to. Table 4.3 shows the GSP analysis summary for the TBI subject, S3 - Student interaction.

Table 4.3 GSP Analysis Summary TBI subject S3 - Student interaction

Moves	GSP element	General Topic
1-5	Cα1	Accident
6-19	Cα2	Where was accident
20-26	Cβ1	Other driver - drunk
27-32	Ap-Iα	Boys breathalysed?
33-36	Cα3	How long ago accident
37-41	Cβ2	Other driver fined
42-47	Cα4	Accident
48-62	Cβ3	Other driver
63-70	Cγ	Family coping
71-80	Cδ	Girlfriend
81-88	Cϵ	Getting life back
89-106	⋂Cζ1	Getting around - taxis
107-111	Cζ2	Getting around - buses
112-116	Cη1	Going to cricket (sport)
117-122	Cθ	Where do you live
123-127	Cι	Mates
128-138	Cη2	Going to footy (sport)
139-159	⋂Ap-Dα	Facilities for handicapped
160-165	Ap-Dβ1	which footy team do you follow
166-176	Ap-Dβ2	Super League
177-182	Ap-Dβ3	World Series Cricket
183-189	Ap-Dβ4	Pay TV and sport
190-204	Ap-Dγ	Pay TV costs
205-208	Ap-Dβ5	North Sydney players
209-222	Cκ1	School/study before accident
223-228	Cη3	Soccer player before accident?

229-230	Ap-Iβ	Researcher checking equipment
231-239	Ap-Iγ1	Tuck shop at the school
240-241	Cη4	Playing soccer
242-246	Ap-Iδ1	Student's sport
247-272	Ap-Dβ6	Ellas and sport
272-279	∩ Ap-Dδ	Prejudice at University
280-288	∩ Cκ2	What uni before accident?
289-301	Cη5	What sport before accident?
302-321	Cλ	Goals
322-327	Cκ3	Teacher before accident
328-350	Cβ4	Other person in accident
351-365	∩ Cμ	Court case
366-383	∩ Cν	Invest payout?
384-409	∩ Ap-Dε	Melbourne Cup
410-424	Ap-Iγ2	Buying coke at school
425-427	Ap-Dζ	Investing in coke shares
428-430	Ap-Iδ2	Student's sport
431-441	Ap-Iβ2	Researcher winding up
442-447	Ap-Iε	Circumstances of interview today
448-449	Lt	
450	Gb	
451-455	Lt	

Ap-I = Indirect Approach, Ap-D = Direct Approach, C = Centering, Lt = Leave Taking, Gb = Goodbye, ∩ = overlapping topics, αβγδε..= topically dissimilar elements, 1,2,3,4..= recursion of topically similar elements

The first Ap-D occurs with moves 139-159, where the topic of facilities for the handicapped at sporting grounds is raised by S3. This leads into a series of related Ap-D's which revolve around the topic of sport. By move 209 a further

Centring element is introduced regarding what the subject was doing before he had his accident. This pattern is repeated from move 247, where the Ap-D is a return to the safe topic of sport, which then leads on to the topic of prejudice and in move 280, Centring topics continue until move 383. The Ap-D element provided the opportunity for interactants to establish their conception of self and their attitudes, to define the situation and with this basis of information, to build up lines of responsive action (Goffman, 1959). Once the conception of self has been explored through the use of safe topics, the more serious questions relating to the purpose of the interaction, the Centring elements can be introduced.

The Centring element was the realisation of the purpose of the interaction and covered those sections of the overall structure which directly related to the circumstances of the injury, life before and after the injury and the goals and plans for the future. When comparing TBI and control interactions with students it is apparent that a larger percentage of moves was devoted to this element with 67% of moves making up the Centring element in control interactions and 58% in TBI interactions (Table 4.1). However, as with the Ap-I element, the results are skewed because of the interaction of S6. In this particular case, only 18% of moves were related to Centring, whereas in the other six TBI interactions Centring accounted for 42 % to 92% of moves (Appendix

12.4.3). In control interactions, the Centring element accounted for 44% to 97.5% of total moves (Appendix 12.4.4). When the TBI-Student interaction of S6 is removed from analysis, the mean percentage of moves making up the Centring element is similar for TBI and control interactions. This indicates that in the TBI interactions, a similar proportion of time was allotted to the discussion of the key issues relating the their accident. This implies that in both interactions, students and subjects worked collaboratively to focus most of the interaction towards its purpose. However, individual differences are underlined by S6's individual results.

There were some qualitative differences between TBI and control interactions in the way the Centring elements unfolded. While there were few inappropriate moves within this element in either TBI or control interactions, there was some repetition of information in TBI interactions (14%) which was not as evident in control interactions (<1%). Repetition of information was noted in 6/7 TBI-Student interactions. Repetition may have been due to memory difficulties and being fixed on particular topics. For S3 and S7, the driver who was at fault in their accident was a repeated topic. For another TBI subject (S4), his performance prior to his injury was repeated. These achievements were referred to repeatedly with the students as Example 4.4 shows. In the first Centring

element (moves 4-13), S4 immediately asserts himself as a high achiever prior to his injury. Much later in the interaction, the students raise the issue of how people in society deal with disability. This leads student B to give his opinion regarding S4's speech (move 216 onwards) following which S4 talks about his short-term memory difficulties. The TBI subject then reintroduces the topic of his superior skills prior to his injury (moves 237-243), possibly as a face saving strategy, both to divert the students from further investigating his impairments and possibly also to regain control of the interaction.

Example 4.4 TBI subject S4 - REPETITION OF CENTRING ELEMENT Moves 4 - 13, moves 216-243 A&B = Students S = TBI subject

4	**Cα1**	A : So what did you do before you had your accident?
5	**Before**	S : Well I was still at school
6	**accident**	A : Right
7		S : I passed six advanced subjects in the school certificate and came fourth in the state in commerce
8		A : Right
9		S : and the next year I passed six first level subjects and one second level full subject
10		S : The first level was the highest you could do anything
11		A : Mm
12		S : and the second level full was the second highest
13		S : and then about a week and a day before I was due to start my last year of school which was sixth form or Year 12 as its now known I had the accident

216	**Ap-Iα**	B : But like they wouldn't know it
217	**Giving**	B : No one would know it to look at you
218	**opinion**	A : that's right yeah
219	**of speech**	B : I know a brain damaged guy making a speech in Year 12
220		S : yeah
221		B : that's it you seem to be able to think alright
222		S : oh thank you
223		B : (laughs) no sorry
224		S : What I'm saying (laughs)
225		S : What are trying to get brownie points for?
226		B : (Laughs)
227		B : I'm not
228		B : I'm just saying the only thing that gives it away is your slurred speech
229		S : Yeah
230		B : really so
231		S : Yeah
232	**Cι2 Problems since accident**	S : Well and also my short-term memory people will tell you to do something and five minutes later you've forgotten what they've said
233		B : I haven't got a brain injury
234		B : and I suffer the same thing
235		S : Yeah I know well you don't have to XX like me do you?
236		B : (laughs)

237	**Cα2 Before accident**	S : I mean just to exemplify the fact coming fourth in the state in the school certificate without doing any study sixth at maths XX without any study
238		S : but I must admit in the 1970 fifth form year 11 I had to do half to three quarters of an hour study for six subjects
239		S : but I didn't do much work
240		S : See I couldn't afford the time to study in the school certificate because I also played cricket basketball baseball water polo competitive swimming
241		S : I was in the surf club
242		S : I played tennis (laughs)
243		S : and besides all this I was also in the school band (Laughs)

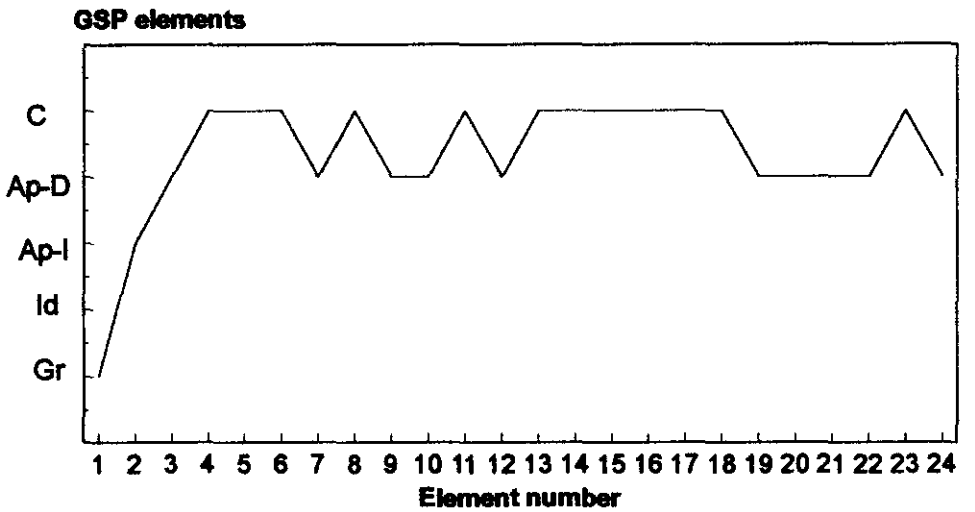
The structural representation of GSP elements allows for recursion of some elements. In the interactions between subjects and students, the elements of Ap-I, Ap-D and C have the potential for recursion. Given that the purpose of the interaction involved students asking about very personal information, it was expected that the use of the Approach elements would be used to both lead into the Centring elements as well as fill in spaces where Centring has been exhausted. Recursion of elements can be topically dissimilar (which are distinguished by the placing of Greek letters (e.g., αβγδεζ etc.) after the respective elements, or they may be topically similar, in which case Arabic numerals are placed after the Greek letter. For example, students and a TBI subject may commence with a

Centring element regarding his condition at the accident scene (Cα1), then move on to the injuries attended to at the hospital admission (Cα2), the rehabilitation process (Cα3) and other injuries (Cα4). These are all topically similar and therefore are followed by α with a series of Arabic numerals. With a further Centring element of the TBI subject's living circumstances at the time of data recording, the topic is dissimilar and therefore a new Greek letter (β1) is used. If these living circumstances are expanded upon by describing the subject's ability to carry out his own personal care, then the element would be identified by β2.

To examine the recursion of Centring elements within the context of the other elements, two matched pairs will be examined. The recursion of Centring can be seen in student interactions with S2 (TBI subject) and C2 (control subject)(Figures 4.1 and 4.2). As was expected the use of Ap-D in C2's interaction and Ap-D and Ap-I in S2's interaction indicate that these elements recurred throughout. The use of Ap-I's and Ap-D's provided subjects and students with opportunities to discuss non-threatening topics (such as watching the football on TV, the weather) before introducing the more confronting topics of life after severe injury. Figure 4.1 shows that the TBI subject and students engaged briefly in an Ap-I element (i.e., What have you been doing?) after the

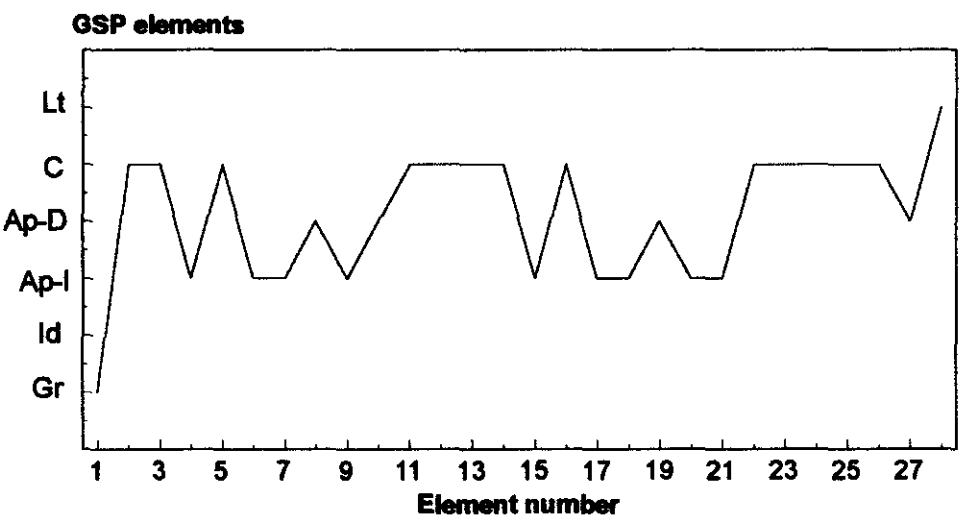
Greeting. This was followed by an Ap-D which described a computer course that the TBI subject was attending. This quickly lead into a series of Centring elements where S2's memory problems were described. There was an interplay between Approaches and Centring elements throughout this interaction, which appeared to facilitate the establishment of the subject's credibility and feelings of solidarity with the students. This pattern was repeated in the control (C2) - Student interaction. Following the Greeting, the purpose of the interaction was immediately introduced (a Centring element), but was followed by a series of Ap-I and Ap-D elements. These included what the subject had just had for lunch, the difficulties of interacting with teenage girls, the weather and the current football scores. By element 11 the Centring was then more definitely established through topics such as what the subject did in his spare time and his work before the accident. Interestingly, the Centring then stalled as the students appeared to run out of questions (element 15), and another set of Approaches followed. In element 23, C2 re-established control by reintroducing the purpose of the interaction, and prevention/education issues regarding risk-taking behaviours in young men. As discussed previously, Ap-I and Ap-D elements occurred with similar frequency in both TBI and control - student interactions and were an important resource for both interactants to enable the realisation of Centring elements.

Figure 4.1 GSP structure of TBI subject S2 - Student interaction



Gr=Greeting, ID=Identification, Ap-I = Indirect Approach, Ap-D = Direct Approach, C = Centering, Lt = Leave Taking, Gb = Goodbye

Figure 4.2 GSP structure of Control subject C2 - Student interaction

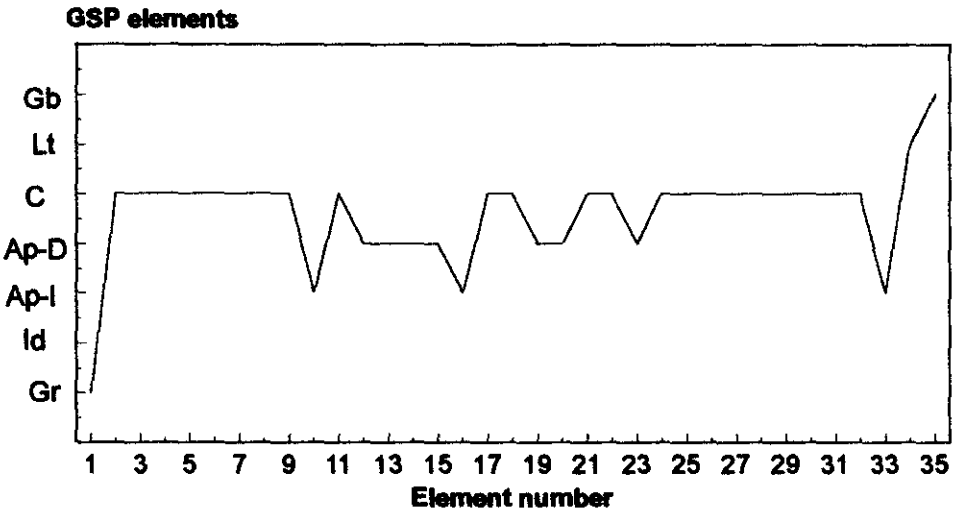


Gr=Greeting, ID=Identification, Ap-I = Indirect Approach, Ap-D = Direct Approach, C = Centering, Lt = Leave Taking, Gb = Goodbye

While the Approach elements were an important resource, they were overused in one TBI subject (S6) - student interaction. In Figures 4.3 and 4.4, TBI subject S6 and his matched control, C6 are compared. While the C6 interaction evidences the use of the Approach elements, these were used to facilitate the eventual information transfer in the Centring elements. In the case of TBI subject S6, there are frequent attempts at Centring, however, they do not extend beyond one element, indicating that there was no consecutive recursion of Centring elements. Of the nine Centring elements, two were inappropriate/incomplete and one was a repetition. All Centring elements were initiated by the students and terminated by the TBI subject's initiation of Ap-I or Ap-D elements. The use of Approaches in this interaction were not to focus the information exchange towards Centring elements, but appeared to be the only superficial way the TBI subject could engage with the students.

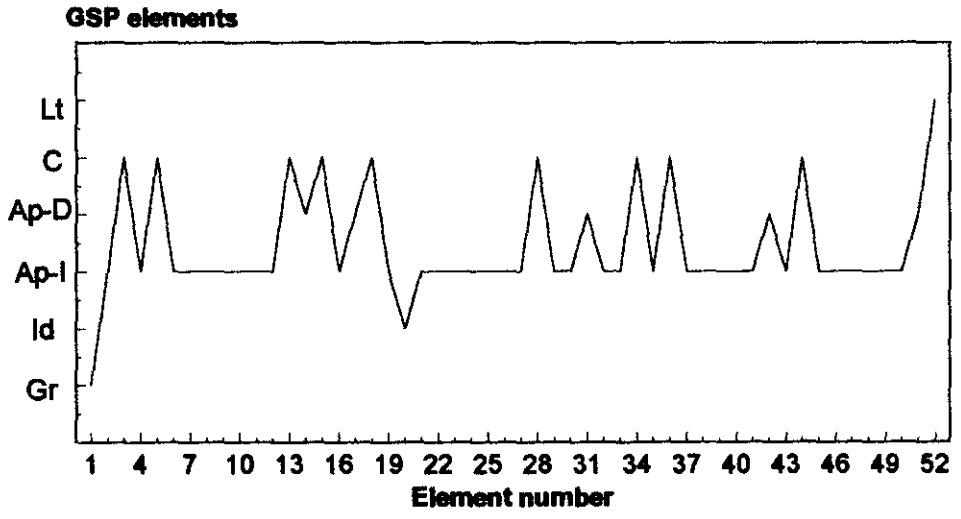
These two comparisons demonstrate the heterogeneity of the TBI population, and the importance of considering the individual as well as the group. In the case of S6, aberrant features were also detected at the exchange structure level (Section 6.2.1) with evidence of difficulty with information giving (with reliance on joke telling). As the primary purpose of the Centring element was to provide information to students, it is not surprising that these two levels of analysis mirror S6's paucity of linguistic resources.

Figure 4.3 GSP structure of Control subject C6 - Student interaction



Gr=Greeting, ID=Identification, Ap-I = Indirect Approach, Ap-D = Direct Approach, C = Centering, Lt = Leave Taking, Gb = Goodbye

Figure 4.4 GSP structure of TBI subject S6 - Student interaction



Gr=Greeting, ID=Identification, Ap-I = Indirect Approach, Ap-D = Direct Approach, C = Centering, Lt = Leave Taking, Gb = Goodbye

The Centring element, in most cases, was represented similarly across TBI and control interactions. This demonstrates that the TBI subjects were given the opportunity to assume and did assume the responsibility of providing information which directly related to the purpose of the interaction to a similar extent as controls. The context (field, tenor and mode) and the genre of a teaching/information giving interaction were powerful enough to enable these subjects to interact in similar ways to their matched counterparts.

Finally, the Leave-Taking and Goodbye elements were of a similar length in TBI and control - student interactions (Table 4.1). These elements were initiated by the researcher in all cases, with no episodes of inappropriate behaviour. In some cases, these last elements occurred outside the recording room. However, in those instances where they were recorded, there were similar sentiments expressed in both TBI and control interactions. The following two examples show Leave taking and Goodbye elements for a TBI (S3) and control (C7) interaction (Examples 4.5 - 4.6). Both TBI and control subjects demonstrated evidence of having established solidarity with the students through similar leave taking and goodbye sequences.

Example 4.5 TBI subject S3 - Student condition - LEAVE TAKING/GOODBYE
Moves 448-455 A = Student S = TBI subject

448	**Leave**	S : Cause I'm very appreciative of youse talking to me
449	**Taking**	A : No worries (stands up)
450	**Goodbye**	A : See you later mate
451	**Leave**	A : Good to meet ya
452	**Taking**	S : Nice to meet youse too
453		A : Yeah good luck
454		S : Thanks
455		S : I'll be back here teaching one day

Example 4.6 Control subject C7 - Student condition - LEAVE TAKING/GOODBYE
Moves 494 - 500 A&B = Students S = TBI subject

494	Leave	S : Nice to meet you
495	Taking	B : Nice to meet you too
496		A : same
497	Goodbye	A : See you round mate
498	Leave	B : Hope work goes good for you
499	Taking	S : Give up those smokes mate
500		B : (laughs)

4.2.2 Researcher condition

At the completion of the interaction with school students, TBI and control subjects were invited to have a short interaction with the researcher to address any questions they may have had regarding the project. While this was the key purpose of the interaction there was another underlying purpose which was less well defined. This was an opportunity for the researcher to debrief subjects about their student interaction, for the subjects and the researcher to become better acquainted and also for the researcher to thank subjects for being involved. That is, there was both an information giving component and an interpersonal requirement for the researcher and the subjects to establish sufficient involvement to facilitate the additional goals. The GSP of these interactions reflects these purposes, when compared to the student interactions.

There were no Greeting or Identification elements in the control interactions as these had already been completed when the subjects had arrived at the school. In contrast, two TBI subjects made a Greeting. One (S5) was appropriate, however the Greeting and Identification elements in the S6 interaction were inappropriate. The Identification moves occurred following the initial Centring element, with S6 checking the name of the researcher. This was immediately followed by the Greeting "How are you going" at move 19. While it appears

reasonable to check the name of a stranger with whom you are interacting, a renewed Greeting appeared superfluous.

The Ap-I element did not occur as frequently in Control - Researcher interactions as it did in TBI interactions (Table 4.1). The Ap-I's which occurred in TBI interactions appeared to be used as a compensatory strategy for TBI subjects when they were unable to initiate further Centring elements. As Ap-I elements refer primarily to the immediate situation, these appeared to be the easiest for the TBI to initiate. Some examples of Ap-I's in TBI interactions included lighting a cigarette, asking whether the subject could continue talking to the students on another occasion, student holidays and asking the researcher when they were going on holidays. In two TBI - Researcher interactions, however there were no Ap-I elements.

There were some qualitative differences in the use of the Ap-I element when comparing TBI and controls with the researcher. In two interactions between TBI subjects and the researcher, inappropriate advances were made to the researcher (Examples 4.7 - 4.8). This did not occur with any control subject.

Example 4.7 TBI subject S1 - Researcher condition - INAPPROPRIATE Ap-I
Moves 370 - 384 S = TBI subject R = Researcher

370	Ap-Iη2	S : Leanne (..)
371		R : mm
372		S : it's inappropriate I shouldn't
373		R : OK if it's inappropriate don't do it
374		S : Leanne I can't be a liar
375		S : I cannot be a liar
376		S : I said you were irresistible
377		R : mm
378		S : Can I hold your hand please?
379		R : No that's quite inappropriate
380		R : You're right that's inappropriate
381		S : I thought it was
382		R : mm
383		S : Leanne thank you very much
384		R : OK

Example 4.8 - TBI subject S6 - Researcher condition - INAPPROPRIATE Ap-I
Moves 73 - 90 S = TBI subject R = Researcher

74	**Ap-I**	┌ K2	S : And what are you doing for my birthday?
75		└ K1	R : I'm not doing anything for your birthday I don't think
76		┌ A2	S : Would you like to come would you like to go to my birthday?
77		└ A1	R : No

78	chall	R : Haven't you already had it?
79	chall	R : Didn't you say it was last Sunday?
80	rchall	S : I had but no no I have a special one for my birthday
81	cfrq	R : Oh are you?
82	K2	R : What are you going to do?
83	K1	S : Probably have a dance
84	K2f	R : (nods)
85	A2	S : Would you like to come dancing with me or?
86	A1	R : No I think I'll probably be busy somehow
87	clrq	S : Doing what?
89	K2	R : Have you got any other questions?
90	K1	S : No (shakes head)
91	close	R : OK well we'll finish there

In this latter case, the request from S6 is met with a challenge (moves 78 -80), then a diversion to another question, followed by a failure by the researcher to respond to a clarification request (move 87) and a conclusion to the interaction (move 91). The researcher uses modality resources to soften the rejection in move 86 ("probably.. somehow"), however in move 89 there is a clear indication that the researcher is discontinuing this particular element.

While these were the only two instances of inappropriate Ap-I elements in the researcher-TBI condition, they are significant as they exemplify the interpersonal communication impairments that are frequently described following TBI. By miscalculating the tenor relationship, both S1 and S6 precipitated an abrupt completion to the interaction or rejection by their communication partner - sequelae which are commonly reported clinically. The Ap-I element was used successfully by most TBI and control subjects to enable further discussion of the Centring elements, or to lead into an Ap-D element. In the case of S6, the only Centring element was initiated by the researcher at the beginning of the interaction with no subsequent recursion. His use of the Ap-I element appeared to be the only generic structural resource available to him to maintain the interaction. This may indicate that S6 did not have an overall schema or macrostructure of the interaction he was involved in, which was also apparent in his student interaction.

The mean percentage of moves in the Ap-D element was also similar in TBI and control interactions with the researcher, particularly when S6's data were removed (Table 4.1). The Ap-D element realised topics which required some in-depth discussion about real world events, and this frequently involved the giving of opinions. In one case, however, the TBI - Researcher interaction was

characterised by inappropriate information giving. As well as making an inappropriate advance to the researcher as outlined above, S1 also gave large amounts of personal information about his previous sexual history. This information giving accounted for 37% of his total moves. There were no other aberrant features in TBI or control interactions in the Ap-D element.

The Centring elements in the researcher interaction were usually initiated by the researcher with an invitation to subjects to ask questions regarding the project. The mean percentage of moves making up the Centring element was higher in the control interactions (53%) with the researcher when compared to the TBI interactions (31%). There appeared to be fewer moves making up the Centring elements in TBI-Researcher interactions, primarily because of an increased reliance on Ap-I elements.

When examining individual subject data, however, there was a wide range of the percentage of moves realising the Centring element in both TBI and control interactions (Appendix 12.4.5-12.4.6). For example, in TBI interactions, Centring moves accounted for from as little as 6% of moves within an interaction (S1) to as much as 58% (Appendix 12.4.5). Similarly, for control interactions, the Centring moves ranged from as little as 27% of moves to 100% (Appendix

12.4.6). This variability reflects the varied purposes of the researcher interaction. For example, when comparing TBI subject S1 in his interactions with students and the researcher, there are marked differences in the way the interactions unfolded. In the student interaction, 17% of total moves were focused on the Ap-I element, 10.5% on Ap-D and 68.5% on Centring (Appendix 12.4.3). When S1 interacted with the researcher, 22% of the moves realised Ap-I elements, 69% were Ap-D elements and only 6% were moves realising Centring (Appendix 12.4.5). For this particular subject, the influence of the tenor relationships in the case of the student interaction to some extent "controlled" or normalised the GSP elements. In the student interaction, S1 responded to the contextual configuration which required him to interact with students in an information giving role, (as indicated by 68.5% of moves making up Centring elements). In the more loosely defined researcher condition, there were three Centring elements of which only one was introduced by the subject. The highest percentage of moves was realised through Ap-D elements which addressed topics such as S1's inability to go out socially, to drink socially, his work and search for a girlfriend. Some of this information was inappropriate with specific reference to S1's previous sexual history. The topical progression appeared to reflect the case that S1 was essentially lonely, and needed companionship. It appeared that S1 had not grasped the purpose of the interaction, but rather saw it as an

opportunity to provide information about himself, and finally to make inappropriate advances to the researcher (see Example 4.7 above). There was also a failure to respond to leave taking moves by the researcher. The interaction was only concluded once the researcher had made it overtly clear that an inappropriate advance was unacceptable. S1 appeared to misjudge many interpersonal aspects of the interaction, as well as to lack an overall schema or script of how the interaction may have been expected to unfold.

As the researcher interaction fulfilled a number of functions, the increased use of moves in Ap-D elements was not unexpected. The Ap-D element appeared to enable both the researcher and the subjects to discuss topics which may have not been directly relevant to the purpose of the research with two communicative goals. One was to establish social identity or one's concept of self by discussing work issues and giving opinions; and the other was to enable the interactants to get to know each other through discussing personal topics such as plans for the future. Predominant use of the Ap-D element in the researcher condition was not limited to TBI interactions as it was the dominant element in three control interactions (C1, C2 and C7).

An examination of the GSP for the C1-Researcher interaction allows for a comparison of the range of interpersonal goals that could be successfully achieved while at the same time maintaining the overall purpose (Table 4.4). It also provides a contrast with the S1-Researcher interaction detailed above.

Table 4.4 GSP Analysis summary Control subject C1 - Researcher condition

Moves	GSP element	General topic
1-13	Ap-Iα	Opening questions re how students went
14-81	Cα	Research project
82-114	Ap-Dα	Asking about work with Spinesafe
115-134	Ap-Dβ	Travel to Gunnedah and Ballina for work
135-145	Ap-Dγ1	Subject's retirement plans - Ballina
146-166	Ap-Dγ2	Researcher's family in Ballina
167-175	Ap-Dγ3	Retirement plans
176-182	LT	
183-192	Cα2	Subject request to researcher to talk about research
193-216	Ap-Dδ	Jenny - staff member at Spinesafe
217-219	LT	
220	GB	

In the C1-Researcher interaction, there was initially some discussion regarding the students (moves 1-13), followed by the primary Centring element of the interaction, concerning the research project (moves 14-81). A series of Ap-D

elements then established the control subject (C1) as an active working individual who traveled widely, and who had made plans for his future. The researcher then provided some personal information (moves 146-166) which led to further discussion of the subject's retirement plans. An attempt at leave taking (moves 176-182) was followed by recursion of a Centring element which raised the possibility of the researcher disseminating research results at some time in the future to C1's workplace. A further related Ap-D regarding one of the staff members of Spinesafe where C1 worked was then followed by a successful leave taking and goodbye. The GSP of this interaction demonstrates that after the Centring work had been done, the talk could turn to the interpersonal work of establishing participants' identity through discussions of work and future plans, but with the overall schema of a return to the purpose of the interaction with recursive Centring and finally with thanks being expressed in the Leave taking. For this overall schema to be successful, both participants needed to jointly negotiate their realisation. The GSP analysis of S1 and C1 demonstrates how different interpersonal goals translated into varied use of crucial elements such as the Approaches and the percentage of moves which made up the Centring element. If one interactant does not have a clear purpose and overall schema of how an interaction is expected to unfold, or if interactants have conflicting purposes, then the final GSP will reflect this. In the case of the S1-Researcher

interaction, the interactants appeared to be at cross purposes with very little of the talk being devoted to Centring, a high proportion of Approach elements focusing on establishing a close personal relationship with the researcher being initiated by the subject, and finally an abrupt end to the interaction. In contrast, with the C1-researcher interaction, the communicative goals appeared to be in tandem, with both participants working so that the Centring element was achieved, followed by an establishment of solidarity through equal information giving and finally by a recursion of the primary purpose.

4.3 Discussion

The examination of GSP analysis in a structured interview context was driven by a number of questions. The first of these was whether TBI and control subject interactions differed with respect to the elements proposed and adapted from Ventola (1979) in face to face encounters. As with the first study, the GSP was different for student and researcher interactions, although TBI interactions more closely approximated controls in the student condition when compared with the researcher condition. TBI subjects were more likely to produce inappropriate or incomplete elements than the controls. This appeared to be due to a number of reasons including memory difficulties (e.g., repeating identification elements), perseveration on emotive topics (e.g., obtaining revenge for the accident) or the

need to repeatedly establish some authority or sense of self by reporting previous achievements.

The Approach elements were used differently in TBI and control interactions. In the control-student interactions, the Approach elements were used to establish interpersonal links, by discussion of safe topics to facilitate the introduction of the more confronting Centring elements. While this also occurred in some TBI interactions with students, the Approach elements were sometimes used by students to refocus the TBI subject on the purpose of the interaction, or to smooth over an abrupt topic change. This strategy by students to preserve the face of TBI subjects replicates Ulichny and Watson-Gegeo's (1989) study of students who saved the face of their teacher when the teacher was in error. Approach elements were not used in this way in control interactions. Rather, if the interaction needed to be refocussed in control interactions, usually because the students had run out of questions, then the control subject initiated a Centring element. Control subjects were more likely to overtly direct the interaction, both through their introduction of Centring topics and also by stating the question role of students through the Ap-I element.

Some differences were also noted in the pattern of recursion of GSP elements. In the majority of TBI and control interactions, there was a pattern of consecutive recursion of Centring elements interspersed with Approach elements. In one case, however, the TBI subject sabotaged the Centring elements introduced by students by introducing Approach elements. This resulted in a generic structure that was marked by erratic introduction of elements and a reliance on Indirect Approaches. Differences in the sequence of GSP elements were also demonstrated between TBI and control interactions with the researcher. In one example, the TBI subject (S1) was shown to use the Direct Approach and Indirect Approach elements for aberrant purposes (such as making advances to the researcher). Other aberrations in the GSP included a failure to return to the purpose of the interaction, and problems with detecting Leave Taking elements. There are a number of reasons which may account for these aberrations. Firstly, this TBI subject appeared to grossly misjudge the tenor relationships within the encounter, resulting in a misuse of the Approach elements. By misinterpreting the type of tenor relationship which could be established appropriately in this setting, many GSP elements were affected. While the psychosocial difficulties of people with TBI have been described in global terms, such as being "socially inappropriate" or "self-centered" (Olver, Ponsford & Curran, 1996), to this researcher's knowledge there has been no

evaluation of the effects of these behaviours on the macro-structure of interactions. In addition, there has been no previous research which has deliberately varied the tenor of an interaction to evaluate its macrostructure. A second problem appeared to be a failure by S1 to detect the primary purpose of this interaction. This resulted in a failure to ask questions regarding the project, with a paucity of moves relating to Centring elements.

Another purpose of the present study was to examine whether GSP analysis would differentiate between student and researcher conditions. These conditions varied in two important ways according to the interpersonal requirements of the task and also the scope of the enquiries being made. The establishment of an interpersonal relationship in the student condition using Ap-I and Ap-D elements appeared to be important for the Centring elements to occur successfully. That is, the establishment of the interpersonal relationship appeared to be directly related to the students' ability to discuss personal topics with the subjects. The Approaches were a means to the end of achieving Centring elements. This is confirmed by the fact that there were a higher percentage of moves forming Centring elements in the student condition when compared to the researcher condition for both TBI and control interactions. In the researcher condition, there were dual purposes to the interaction: a) providing feedback regarding the

research project (Centring elements), and b) getting acquainted/wrapping up the day. In contrast to the student condition, completion of the Centring elements did not appear to rely on the presence of Approaches. The Approaches appeared to perform the function of allowing the researcher and subjects to become better acquainted before finalising the contact. This latter function resulted in a higher percentage of moves being devoted to Direct Approach elements in the researcher condition when compared with the student condition, in both TBI and control interactions.

4.4 Summary

4.4.1 List of findings

Investigation	Finding
STUDENT CONDITION	
Greeting	Similar quantitatively TBI vs. Controls but different qualitatively - inappropriate in one TBI interaction
Identification	Repeated and inappropriate in one TBI interaction
Approach - Indirect	Similar percentage of moves in TBI vs. Controls but inappropriate and repeated in some TBI Used by students on TBI to refocus topic
Approach - Direct	Similar percentage of moves in TBI vs Controls Used to allow introduction of Centring
Centring	Similar percentage of moves in TBI vs. Controls Repetition in TBI Some differences in recursion of Centring elements in TBI vs. Controls
Leave Taking/Goodbye	Similar length in TBI vs. Controls
RESEARCHER CONDITION	
Greeting	None recorded for Controls One inappropriate Greeting for TBI
Identification	None recorded for Controls One inappropriate Identification for TBI
Approach - Indirect	TBI > Controls Inappropriate in TBI
Approach - Direct	Similar percentage of moves in TBI vs Controls Inappropriate in TBI Different functions to student condition
Centring	Controls > TBI Wide variability
Leave Taking/Goodbye	Similar length in TBI vs. Controls but occasional failure to detect cues by TBI

4.4.2 Conclusions

This chapter set out to investigate whether placing TBI subjects in a powerful information giving role would provide them with similar language choices at a macro-structural level to control subjects. There is a paucity of research examining the generic or macro-structure of TBI interactions. The majority of research has been directed towards the production of monologic narratives (Chapman et al., 1992; Coelho et al., 1995; Hartley & Jensen, 1991) and procedural discourse (Mentis & Prutting, 1987). More recently, the relationship between key narrative elements and various executive functions has been explored (Bond-Chapman et al., 1995; Coelho et al., 1995). For example, Coelho et al. (1995) found significant correlation between story structure in narrative production and measures of executive function. Given the cognitive impairments which have been reported to be sequelae of TBI (Ylvisaker & Szekeres, 1994), it is not surprising that there have been attempts to use discourse processing models which propose cognitive bases to discourse production. Information constructs have been suggested to characterise the ability to use language to organise information at discourse level (Bond-Chapman et al., 1995; van Dijk, 1977). For example, scripts as organised mental representations of situation-action routines (Schank & Abelson, 1977) are reported to facilitate acquisition and retrieval of information, aid in the planning

and execution of familiar activities and aid in understanding another person's experience (Bower, Black & Turner, 1979). Discourse deficits following TBI may be related to a variety of different processes including cognitive (e.g., planning, adopting organising schema, retrieving from memory), linguistic (e.g., syntax) and psychosocial factors (e.g., communicative effectiveness in various contexts)(Bond-Chapman et al., 1995).

The present research demonstrates that TBI subjects had difficulty with the structure of face to face interviews. The problems observed were related to inappropriate or incomplete structural elements, and repetition of elements, although in most cases the mean percentage of moves composing structural elements was similar when comparing TBI and control interactions. Some of these problems may be the result of cognitive impairments which interfered with TBI subjects' ability to organise the schematic structure or to plan how the interaction might unfold. The manipulation of tenor variables appeared to highlight the difficulty some TBI subjects experienced with judging the interpersonal requirements of the tasks, which then affected the realisation of generic structure. While there has been a paucity of data linking interpersonal/social skills with cognitive abilities, it has been suggested that future research is needed to address the interdependency of cognitive, linguistic

and psychosocial abilities in discourse processing (Bond-Chapman et al., 1995; Coelho et al., 1995; Szekeres, 1992). Finally, the communication partner's contribution to the interaction was also crucial to the way the GSP of interactions unfolded. The study of telephone service encounters showed the different ways generic structure elements were manipulated by the communication partner in TBI interactions, compared to their interaction with controls (Chapter 3). It was also demonstrated that by placing a TBI subject in a position of relative power in an interaction, the GSP could be influenced because of the expectations placed on the communication partner (i.e., the students) to make the structure of the interaction as normal as possible. The impact of the communication partner's contribution to the overall structuring of TBI interaction has not previously been addressed, to this researcher's knowledge. While it has been frequently acknowledged that the communication partner's contribution is important in TBI interactions (e.g., Snow et al., 1995), there has been no direct evaluation of the impact of that contribution on the unfolding of generic structural elements.

Some acknowledgment has been made of the need to examine the macro - structure in conjunction with more finely detailed analyses of TBI discourse (Flanagan, McDonald & Togher, 1995; Marsh & Knight, 1991). There have

been no analyses, however, which examine two-way interactions of TBI subjects as a series of steps which unfold according to expected patterns as determined by the genre. The present research has important clinical implications. The measures used (the percentage of moves making up structural elements, the percentage of moves which were aberrant and the pattern of realisation of elements) show promise clinically. In addition to providing a new assessment tool there are also implications for treatment of discourse deficits at the macro-structural level. The scant attention paid to the generic structure of TBI interactions has resulted in a virtual absence of treatment strategies to address difficulties with problems in this area. These implications for assessment and treatment will be addressed in Chapter 9.

The next two chapters provide answers to the next major research question of this thesis, which is whether TBI subjects differ from controls at the level of information exchange (giving and receiving information). This represents a shift from the genre level (Figure 1.1) to the discourse semantics level of analysis, but continues to examine the interpersonal functions of language. Differences between TBI and control interactions in the realisation of generic structural elements may be in part due to the ability of subjects and interlocutors to give and receive information. The next chapter investigates the exchange structure of information requesting interactions.

Chapter 5
Exchange structure analysis results of TBI and control subjects in information requesting interactions

5 Information exchange in TBI discourse

This chapter presents the results of exchange structure analysis of TBI and control subjects in information requesting interactions. It addresses the question of whether TBI subjects varied their use of exchange structure moves with different interlocutors who varied according to tenor, when compared with controls. It also examines how interlocutors varied in the way they exchanged information with TBI subjects when compared with controls and also when compared with each other. The exchange of information and goods and services underlies all communication (Ventola, 1987). Therefore, while exchange structure analysis has not been previously completed on TBI interactions, it is still possible to examine a small number of studies which have addressed the issue of speaker role (e.g., initiator or responder) and information giving and requesting. Coelho et al. (1991) measured their five TBI subjects according to the distinction of being a speaker-initiator or speaker-responder to examine conversational interchange. Speaker initiations were classified as obliges (i.e., initiations containing the expectation that there would be a response) and comments (i.e., those initiations which did not demand a response). Speaker responses were classified according to adequacy of responding. Results indicated

that the communication partner, a research assistant, produced a higher percentage of obliges with TBI subjects than with controls. The increased obliges were accounted for by the research assistant needing to request clarification of TBI responses. TBI subjects were noted to produce fewer obliges than their matched controls. Reduced requesting behaviour by TBI subjects has also been noted in other studies (Mentis & Prutting, 1991; Schloss et al., 1985).

Coelho et al.'s (1991) TBI subjects also were distinguished from controls according to the adequacy of their responses. Control subjects showed greater production of "adequate-plus" responses (i.e., those which relevantly elaborated the theme so as to provide more information than was requested). This fostered extended dialogue on specific topics in control interactions in contrast to shorter, less elaborated discussions in TBI interactions. These observations were corroborated by Mentis and Prutting's (1991) in-depth study of one subject who provided fewer new units of information than the normal subject. It was reported that the TBI subject relied more on the structure provided for him by his communication partner than the normal subject, who was reported to be a more active and contributing partner.

The difficulty with these studies is the influence of the tenor relationship within interactions, where a research assistant is required to have a conversation with TBI subjects. Coelho et al. (1991) acknowledge that their research assistant was responsible for keeping the interactions focused and on track and that they may have limited the TBI subjects' potential variety of responses. This is one issue which is addressed in the present research.

Few studies have described the ways in which contributions of the communication partner may impact on the communication of the person with TBI (Bond & Godfrey, 1997; Coelho et al., 1991; Mentis & Prutting, 1991). The common observation from these studies is that the communication partner (i.e., the research assistant or speech-language pathologist) takes responsibility for maintaining the conversation with an increased frequency of question asking, prompting and requesting clarification and interpretation. Similarly, communication partners have been described as talking for a significantly shorter time with TBI subjects when compared with controls, because they were less likely to find a topic of common interest with TBI subjects; they may have been given few opportunities to speak and were not encouraged to keep talking by TBI subjects. This has been suggested to lead to interactions which are judged to be less rewarding, interesting and appropriate when compared with control

interactions (Bond & Godfrey, 1997). When the tenor relationships between communication partners and TBI subjects are appraised in these studies, these results may have been expected. The way information is exchanged is dependent on the relationship between participants as well as on the activity that is occurring and the structure which is expected to unfold. Taking the tenor relationship into account is a critical feature of the design in the present research.

5.1 Methodology

To investigate the exchange structure of TBI and control information requesting interactions, subjects were compared with four different interlocutors. This resulted in thirty eight transcripts (i.e., five TBI subjects in four information requesting interactions - bus timetable information, police, mother and therapist, five control interactions with bus timetable information and therapists, and four control interactions with police and mothers- the police and mother transcripts were not possible for one control subject) which were scored according to exchange structure moves. The methodology for data collection has been described in detail in Chapter 2. Three types of moves were compared including:

K1 move per minute which is considered as the rate of information giving within interactions,

K2 moves per minute which is interpreted as the rate at which interactants are in

the position of not having information and are either requesting the information or being given the information (as in a teaching exchange), and

Dynamic moves per minute which is the rate of negotiating and tracking of information which is needed for information exchange to be successful.

The frequency of these exchange structure elements divided by the total time to give a measure of the frequency of exchange moves per minute appeared to be the most sensitive measure of information exchange. For example, a measure such as moves per exchange provides little information regarding who gave the information, how the information giving was initiated, or the relative frequency of information giving and requesting. While these data are reported as individual moves per minute, it is with the recognition that all moves occur within the context of a full exchange. That is, a K2 (information requesting) move cannot occur in isolation but must be followed by a K1 (information giving) move, for a complete exchange of information to occur. It is therefore recognised that interactions are two-way negotiated achievements (McTear & King, 1991) and that the communication behaviour of one interactant will determine the choices available in the next turn.

Three comparisons have been made which address the research questions outlined at the end of Chapter 1. Firstly, *TBI and control subjects* are compared in four information requesting interactions on the telephone. Secondly, the *communication partners* are compared when speaking to TBI vs. controls and finally, interlocutors are compared with each other.

5.2 Information exchange in TBI vs. control interactions

5.2.1 TBI vs. controls in information requesting interactions

A description of the total length of transcripts (in total number of moves, total time, total number of exchanges and moves per exchange) are reported in Appendix 12.4.7. The mean frequency of K1 moves per minute, K2 moves per minute and Dynamic moves per minute by TBI and control subjects can be found in Tables 5.1 - 5.2.

Table 5.1 Exchange Structure moves by TBI subjects across Police, Bus, Therapist and Mother conditions

Speaker condition	K1 moves/minute¶	K2 moves/minute§	Dynamic moves/minute†
Police (n = 5)	Mean = 2.8 Range = 2.0 - 4.3 S.D. = 1.0	Mean = 1.4 Range = 0.0 - 2.4 S.D. = 0.9	Mean = 6.9 Range = 3.2 - 9.5 S.D. = 2.5
Bus (n = 5)	Mean = 0.7 Range = 0.0 - 1.5 S.D. = 0.7	Mean = 1.5 Range = 0.4 - 2.3 S.D. = 0.7	Mean = 4.4 Range = 3.2 - 6.2 S.D. = 1.2
Therapist (n = 5)	Mean = 1.6 Range = 0.7 - 2.1 S.D. = 0.6	Mean = 1.7 Range = 0.2 - 2.3 S.D. = 0.9	Mean = 6.2 Range = 1.8 - 8.6 S.D. = 2.6
Mother (n = 5)	Mean = 2.8 Range = 1.4 - 5.2 S.D. = 1.5	Mean = 2.3 Range = 1.2 - 4.8 S.D. = 1.4	Mean = 3.5 Range = 2.2 - 7.2 S.D. = 2.1

¶K1 moves = information giving moves §K2 moves = information requesting †Dynamic moves = negotiation moves

Table 5.2 Exchange Structure moves by control subjects across Police, Bus, Therapist and Mother conditions

Speaker condition	K1 moves/minute	K2 moves/minute	Dynamic moves/minute
Police (n = 4)	Mean = 0.8 Range = 0.0 - 1.5 S.D. = 0.8	Mean = 2.0 Range = 1.2 - 3.9 S.D. = 1.3	Mean = 6.9 Range = 4.3 - 10.3 S.D. = 2.5
Bus (n = 5)	Mean = 1.6 Range = 0.0 - 4.3 S.D. = 1.6	Mean = 1.7 Range = 0.7 - 2.5 S.D. = 0.8	Mean = 4.6 Range = 3.1 - 6.4 S.D. = 1.3
Therapist (n = 5)	Mean = 1.5 Range = 0.2 - 3.9 S.D. = 1.5	Mean = 0.7 Range = 0.5 - 0.9 S.D. = 0.2	Mean = 3.4 Range = 1.6 - 5.3 S.D. = 1.5
Mother (n = 4)	Mean = 2.2 Range = 1.6 - 2.6 S.D. = 0.5	Mean = 1.8 Range = 1.0 - 3.3 S.D. = 1.1	Mean = 3.6 Range = 1.9 - 5.2 S.D. = 1.7

Measures of K1 moves per minute, K2 moves per minute and dynamic moves per minute were compared using the Wilcoxon Signed-Ranks Matched-Pairs Test to analyse differences between TBI and control subjects across the four conditions (Table 5.3). Information exchange by TBI and control subjects was also evaluated across communication partners (i.e., Police vs. Mothers vs. Therapists vs. Bus Timetable Information Service) using the Friedman Two Way Analysis of Variance (Table 5.4). In those cases where rejection of the null hypothesis occurred, the Wilcoxon Matched-Pairs Signed-Ranks Test was employed to make pairwise comparisons (Table 5.5).

Table 5.3 Comparison of TBI vs. control subjects' use of exchange structure elements across four conditions (Therapist, Bus, Police and Mother) using the Wilcoxon Matched-Pairs Signed-Ranks Test

Exchange structure element	Observed value () = N	Critical value	Comments
K1 moves/min	a. T = 9 (5)	0.41	
	b. T = 10 (5)	0.31	
	c. T = 0 (4)	0.06†	TBI > Controls
	d. T = 6 (4)	0.44	
K2 moves/min	a. T = 14 (5)	0.06†	TBI > Controls
	b. T = 12 (5)	0.15	
	c. T = 6 (4)	0.44	
	d. T = 7 (4)	0.31	
Dynamic moves/min	a. T = 14 (5)	0.06†	TBI > Controls
	b. T = 8 (5)	0.5	
	c. T = 5 (4)	0.56	
	d. T = 7 (4)	0.31	

a. Therapist b. Bus Timetable information service c. Police d. Mother
† Approaching significance

Table 5.4 Comparison of TBI vs. control subjects across interlocutors using the Friedman Two Way Analysis of Variance Test

Exchange Structure element	TBI subjects	Control subjects
K1 moves/min	$\chi^2_r = 34.8$ $p = 0.001$¶ $df = 3$	$\chi^2_r = 4.425$ $p = 0.25$ $df = 3$
K2 moves/min	$\chi^2_r = 1.38$ $p = 0.75$ $df = 3$	$\chi^2_r = 5.4$ $p = 0.15$ $df = 3$
Dynamic moves/min	$\chi^2_r = 9$ $p = 0.05$‡ $df = 3$	$\chi^2_r = 8.7$ $p = 0.05$‡ $df = 3$

¶ Significant at $p \leq 0.001$ ‡ Significant at $p \leq 0.05$

Table 5.5 Pairwise Posthoc Wilcoxon Matched-Pairs Signed-Ranks Test of TBI subjects' use of K1 moves/minute across interlocutors, TBI and control subjects' use of Dynamic moves/minute

Exchange structure element	Observed value () = N	Critical value	Comments
K1 moves/minute by TBI	a. T = 10 (5)	p = 0.31	
	b. T = 0 (5)	p = 0.03 ‡	P>T
	c. T = 13 (5)	p = 0.09	
	d. T = 14 (5)	p = 0.06 †	M>T
	e. T = 13 (5)	p = 0.09	
	f. T = 11 (5)	p = 0.22	
Dynamic moves/minute by TBI	a. T = 15 (5)	p =0.03 ‡	P>M
	b. T = 10 (5)	p = 0.31	
	c. T = 14 (5)	p = 0.06 †	P>B
	d. T = 3 (5)	p = 0.16	
	e. T = 3 (5)	p = 0.16	
	f. T = 12 (5)	p = 0.16	
Dynamic moves/minute by controls	a. T = 10 (4)	p = 0.06 †	P>M
	b. T = 10 (4)	p = 0.06 †	P>T
	c. T = 9 (4)	p = 0.13	
	d. T = 7 (4)	p = 0.31	
	e. T = 7 (4)	p = 0.31	
	f. T = 4 (5)	p = 0.22	

‡ Significant at p≤ 0.05 (i.e., prior to Bonferroni adjustment)

† Approaching significance at p≤ 0.05 (i.e., prior to Bonferroni adjustment)

a. P vs. M b. P vs. T c. P vs. B d. M vs. T e. M vs. B f. T vs. B

K1 moves per minute

TBI subjects provided more information to the police than the matched controls (T=0, p = 0.06)(Table 5.3). This appears to be due to two reasons. Firstly, police were more likely to ask TBI subjects questions when compared with controls and therefore they demanded significantly more information. Secondly, TBI subjects were more likely to provide information which was not requested or relevant to the enquiry. Some of the TBI subjects' information giving was inappropriate, as can be seen in Example 5.1.

Example 5.1 TBI subject S5 - Police condition - UNRELATED COMMENT Moves 81 - 96 S = TBI subject P = Police

81	K1	P : But the main thing is R. is that it's just gotta go through the Commonwealth Rehab
82	cf	S : Commonwealth Rehab
83	rcf	P : Yeah,
84	K1	P : and ah you know they are, they[provide
85	**K1**	**S : [I've got a lot of Aboriginal mates**
86	bch	P : Yeah
87	**K1**	**S : In the service**
88	cf	P : Yeah, oh yeah
89	**K1**	**S : Ah, they're older men**
90	K1	P : Yeah and just go to Cumberland College for the test
91	K1	P : and [then you're right

There were no other statistically significant differences noted in the other three conditions with TBI subjects. To examine any qualitative differences that may have existed between TBI and control subjects' information giving in these conditions, the use of the K1 move was examined in further detail. A K1 move can occur in three different types of exchanges, and can therefore perform three different functions. Firstly, it can occur as an instance of information giving, whereby the K1 move stands alone. This will be referred to as a K1-lead exchange. Secondly, a K1 move can occur in response to a K2 move (in a K2-lead exchange), with provision of information in response to a question. Thirdly, it can occur as the final move in a teaching exchange (or dK1-lead exchange), where it provides the correctness of a response. This classification of K1 moves was used to investigate the types of K1 moves used by subjects in the mother, therapist and bus conditions (Table 5.6).

Table 5.6 K1 moves by TBI and control subjects in Mother, Therapist and Bus conditions

	Mother				Therapist				Bus timetable			
	K1 *	K2 ¶	dK1§	Total	K1	K2	dK1	Total	K1	K2	dK1	Total
S1	4			4	2	5		7	2			2
S2	9	9	3	21	5	1		6		2		2
S3	2	11		13	1	2		3		2		2
S4	2	1		3		1		1				0
S5	12	2		14	8			8	1			1
C1		4		4				0		1		1
C2	6	2		8	8	1		9				0
C3	-	-		-		3		3	7	2		9
C4	1	2		3	5	1		6	1	3		4
C5	5	2		7	8			8		4		4

* = K1 lead exchanges
¶ = Response to a K2 lead exchange
§ = dK1 lead exchanges

The first of these classifications, (K1 lead exchanges) is of interest here because it is these K1 moves which critical discourse analysts propose place interactants in a powerful discursive position (Poynton, 1985). When examining the mother condition, there are differences in the types of K1 moves which are initiated by TBI subjects when compared with controls. For example, when comparing S2 and C2, the control subject uses the K1 move to give his opinion about the task at hand and to provide information about recent happenings (Examples 5.2 - 5.4)

Example 5.2 Control subject C2 - Mother condition
Moves 23-26 C = control subject M = Mother

23	K1	**C : these phone calls are a bit strange to me cause I ask people questions and they have to answer them all**
24	bch	M : Mm
25	K1	**C : Well it seems that way to me anyway**
26	K2f	M : Never mind

Example 5.3 Control subject C2 - Mother condition
Moves 56-59 C = control subject M = Mother

56	K1	**C : cause we went up and saw Linda yesterday**
57	cfrq	M : Oh did you?
58	rcfrq	C : Yeah
59	K2f	M : Oh great!

Example 5.4 Control subject C2 - Mother condition
Moves 68-69 C = control subject M = Mother

68	K1	**C : I got pulled over for speeding**
69	excl	M : Oh no

In contrast, C2's brother with a TBI (S2) used K1 moves to add comments to information that already had been discussed, rather than introducing new information (Examples 5.5-5.6).

Example 5.5 TBI subject S2 - Mother condition
Moves 73-79 S = TBI subject M = Mother

73	K2	M : I don't know that was because I was driving or whether you were tired
74	K1	**S : No I was tired**
75	K1	**S : but it was such a good driver**
76	K2f	M : Oh good

77		K2f	M : Oh I believe you
78		**K1**	**S : Well I didn't say good for nothin'**
79		K2f	M : Yeah

Example 5.6 TBI subject S2 - Mother condition
Moves 128-138 S = TBI subject M = Mother

128		dA2	S : Do you know what?
129		A1	M : What
130		A2	S : If you don't mind when I see you on the weekend can you and I and dad draw up a birthday card and colour it in
131		A1	M : Well you can do that
132		**K1**	**S : On the front it 'll say Happy Birthday Paul you're now and when he opens it there'll be one really big and a small one on the other side**
133		K2f	M : Yeah could could too

This last example also demonstrates another way S2 introduced information. While move 130 is actually a request for action, it is a way of leading into an information giving exchange. Incidentally, C2 made no requests for action in the manner that his brother with TBI did. Rather he tended to make statements of intended action which did not request permission from his mother for their completion (Example 5.7).

Example 5.7 - Control subject C2 - Mother condition
Moves 78-80 C = control subject M = Mother

78		**A1**	**C : I'll probably ring you in a about half hour or so**
79		A2f	M : Alright love
80		A1f	C : Alright

One further way TBI subject S2 positioned himself in a K1 role was to initiate a dK1 exchange (Examples 5.8-5.9).

Example 5.8 - TBI subject S2 - Mother condition
Moves 41-48 S = TBI subject M = Mother

41	dK1	**S : And do you know something that every single person has done?**
42	K2	M : What?
43	K1	**S : As soon as they see the photo they always go "Oh isn't that beautiful!"**
44	K2f	M : Yeah just like you
45	K1f	S : Yeah
46	K2f	M : (laughs)
47	K1	**S : Yeah that's what I find everyone does do the same**
48	K2f	M : Yeah

Example 5.9 - TBI subject S2 Mother condition
Moves 80-85 S = TBI subject M = Mother

80	dK1	**S : You know why you're a very good driver?**
81	K2	M : Why?
82	K1	**S : Because you're a superiorly intelligent left handed person**
83	cf	M : Left handed Leo
84	cf	S : Left hand Leo that's it
85	K2f	M : That's right

The use of a dK1 exchange to give information was not common in TBI - mother interactions. TBI subject S2 used this resource as a strategy to introduce information only with his mother. dK1 exchanges are more commonly initiated

by teachers and therapists as a way of asking for information that they already know the answer to. It appeared to be serving a different function here. Rather than being positioned in an authoritative position, the use of the dK1 exchange by TBI subjects appeared to be a way of getting the interlocutor's attention, or taking the floor. Perhaps S2 used this strategy as it allowed him to initiate an exchange which he already knew the end to. While his mother was briefly in the role of K2, she still had the final say as to the accuracy of his information giving by saying "that's right"(e.g., move 85 in Example 5.9).

The therapist condition also provided evidence of the different ways TBI and control subjects employed information giving during the course of making a request for information. Both TBI subject S5 and control subject C5 made a similar number of initiations of K1 moves (Table 5.6). C5 provided information to the therapist regarding his own involvement with his brother, S5's previous experience of housework, typical ways S5 would approach a task and his views of his brother's current condition (Examples 5.10-5.12).

Example 5.10 Control subject C5 - Therapist condition
Moves 49-57 C = control subject T = Therapist

49	⌐	K1	**C : Like I don't see him much**
50	{	K1	**C : cause I'm from Bathurst myself**
51	{	K1	**C : and I don't get**
52	⌐	bch↓	T : Mm mm

53	K1	C : much time to come down and see him
54	K2f	T : Oh right
55	K1	C : And that I noticed he does get distracted real easy
56	K2f	T : Yeah
57	K1	C : Changes sort of like he can be thinking something and then you can be half way through the conversation with him and he'll change to another one

Example 5.11 Control subject C5 - Therapist condition
Moves 98-108 C = control subject T - Therapist

98	K1	C : He got it pretty easy there for a while like with his wife and that
99	bch	T : Mm mm
100	K1	C : Cause like if any of his problems she'd just do em all
101	K2f	T : Oh right
102	fch	C : Oh well
103	K2f	T : Right
104	K1	C : Men think men think of women know all that stuff so they let em do it all
105	bch	T : Oh
106	K1	C : So they hand it over to them
107	K2f	T : Right
108	K1	T : Oh this is this is sort of taking that into account he's a bit a more impaired than your average sort of male who's lived with, who's had a wife to be able to do things for him

Example 5.12 Control subject C5 - Therapist condition
Moves 144-150 C = control subject T= Therapist

144	K1	**C : But when he's really interested in something he'll he'll be involved in it**
145	K1	**C : but he can he can be distracted if someone new turns up**
146	K1	T : Yeah I mean he's improving with his attention span quite a lot
147	K1	T : but it's still an area that we're trying to work on at the moment
148	K2f	C : Oh yeah
149	K1	**C : Well yeah I think that's the only thing really with his problem now, like him physically he's alright**
150	K2f	T : yeah

C5's contributions are often followed up by the therapist with further related K1 moves or confirmation statements. C5 was therefore encouraged to provide further information to the therapist throughout the interaction. S5, the TBI subject, also made a number of K1 initiations with the therapist, however 75% of these (i.e., 6/8) were inappropriate (Examples 5.13-5.14) and/or overlapping with comments being made by the therapist (Example 5.15).

Example 5.13 TBI subject S5 - Therapist condition
Moves 5-8 S = TBI subject T = Therapist

5	Greet	T : Hello R. How are you?
6	Greet	S : How ya goin'
7	Greet	T : Good
8	K1	**S : I got your number ha ha ha**

Example 5.14 TBI subject S5 - Therapist condition
Moves 21-24 S = TBI subject T = Therapist

21	K1	T : Well I've got quite a number of goals for you
22	chall	S : Have ya?
23	rchall	T : Yeah (.)Um
24	K1	**S : You're it baby Hahahaha**

Example 5.15 TBI subject S5 - Therapist condition
Moves 64-82 S = TBI subject T = Therapist

64	K1	T : yeah cause you tend to go off and buy scratchies¶
65	K2f	S : Yeah
66	K1	T : generally OK
67	jst	S : I'm not used to being with a group like this
68	rjst	T : Mm I know it can be difficult, but [I think that
69	K2	S : [What's going to happen when I'm not here any more?
70	rjst	T :[I guess it'll be a good goal to work on
71	K1	**S : [There'll be no groups like this around**
72	K1	**S : I'm in a protected environment**
73	bch	T : Mm
74	K1	**S : It's weird**
75	clar	T : It is[quite difficult
76	K1	**S : [and XX all the ways like this**
77	K1	T : a protected environment, but if you're sitting down,
78	K1	T : if you've planned to meet someone, you don't just get up and leave them in the middle of [talking to them
79	chall	S : [I do

80	K1	T : while they're in the middle of coffee
81	chall	S : I do
82	rchall	T : But it wouldn't seem a good idea to do that

¶ "scratchies" are lottery tickets in Australia

In this last example, TBI subject S5's information giving overlaps with the therapist's attempts to provide information regarding his goals. S5's K1 moves are ignored by the therapist who continues with her purpose which is to give S5 information (moves 77-78). He then begins to challenge her information giving more directly (moves 79, 81). The conflict seen here is resulting from S5 attempting to give information at a time where the therapist is also giving information. The therapist in this interaction did not request information of S5 (i.e., use K2 moves) and therefore any K1 moves made by S5 were his own initiations. These examples highlight the difference between this control subject and his TBI brother in the way they were permitted to provide information. Previous research has reported lexical and sentential measures such as total number of words, T-Units and information units (e.g., Bond-Chapman et al., 1995) and micro behaviours such as mean turn duration (Bond & Godfrey, 1997). Exchange structure analysis allows an examination of the way in which information is given, by looking at the moves which occur both before and after the information has been handed over. It is crucial to examine the surrounding co-text to permit a clear interpretation of the information giving process.

The Friedman Test was carried out on control and TBI subjects' use of K1 moves/minute across different conditions to identify differences across interlocutors. This revealed that there was a significant difference in the number of K1 moves/minute employed by TBI subjects across the four communication partners ($\chi^2_r = 34.8$, $p = 0.001$, $df = 3$). In contrast, no significant differences in K1 moves/minute were found by controls across the four conditions. Pairwise comparisons were made of the TBI interactions using the Wilcoxon Matched-Pairs Signed-Ranks Test (for small samples)(Table 5.5). Initially a significance level of 0.05 was set, and the results are displayed using this significance level. However, with the Bonferroni adjustment technique, which accounts for the possibility of a Type I error, the significance level became $p = 0.0083$. No results were statistically significant with this stringent test. Despite this, the results achieved at the 0.05 level of significance are reported as they provide an indication of the trends which were observed in the data. These trends were limited statistically primarily as a result of the small sample sizes. For example, when T=0 with a sample size of five subjects, the highest level of significance that could be achieved was p=0.03. As this is early research in the use of systemic functional linguistics with TBI interactions, these trends are of interest.

TBI subjects gave significantly more information to police than to therapists (T=0, p=0.03). This was a function of how much information they were asked for (i.e., K2 by other), as well as possibly misjudging the interpersonal relationships within the task. That is, TBI subjects may have given excessive information assuming a position of overfamiliarity.

K2 moves per minute

The K2 role in an exchange is realised in two ways. We may be requesting information, or we may be placed in this role when we make an utterance which reflects that we do not have the information. The latter frequently occurs in teaching interactions. TBI subjects were in the K2 role more often than control subjects in the therapist condition with a result approaching significance (T=14, p=0.06)(Table 5.3). TBI subjects were active in asking questions, but they were also in the latter category of K2 role, where they indicated they were being provided information. Two of the five TBI subjects used K2 moves, which were not requesting information (Table 5.7). In one case (S4), 70% of his K2 responses were indicating that he did not have the information and was in the less powerful position in the interaction (Example 5.16). Note in this example, that while S4 is giving information, the accuracy of this information is being determined by the therapist, who remains in the K1 role throughout. All control

subjects' use of the K2 moves involved requests for information. They were never involved in a teaching interaction.

No other significant differences were noted with regard to K2 moves either when comparing TBI with control subjects or when examining TBI and control subjects across interlocutors (Tables 5.3 and 5.4). Thus control and TBI subjects were in the K2 role for an equivalent amount of time; however controls were given more information (i.e., K1 moves).

Table 5.7 Use of the K2 move by TBI and control subjects in the therapist condition

Subject	Total K2 moves	K2 move as a request for information	K2 move in teaching interaction
TBI subjects			
S1	8	6/8	2/8
S2	5	5/5	0/5
S3	1	1/1	0/1
S4	10	3/10	7/10
S5	8	8/8	0/8
Control subjects			
C1	2	2/2	0/2
C2	2	2/2	0/2
C3	4	4/4	0/4
C4	3	3/3	0/3
C5	8	8/8	0/8

Example 5.16 TBI subject S4 - Therapist condition
Moves 22-32 S = TBI subject T = Therapist

22	K1	T : I can tell you what you're program is but al-together its up to you -
23	dK1	T : Why do you feel as if the program's good for you?
24	K2	**S : Um I suppose it's helping me to realise my potential in life**
25	cf	T : Yeah, yeah I guess it's the same thing
26	K2	**S : And just helping me to gain acceptance into the community**
27	K1	T : Yeah sort of trying new things like
28	bch	S : Yeah
29	K1	T : the child care thing and
30	bch	S : Yeah
31	K1	T : and I think you're doing that in your program
32	K2f	S : Yeah

Dynamic moves per minute

TBI subjects used more dynamic moves than controls in the therapist condition (T=14, p=0.06, Table 5.3). These were primarily clarification requests, confirmation requests and requests for repetition of information. There were no other significant differences between TBI and control subjects in other conditions with regard to dynamic moves.

To evaluate use of dynamic moves by TBI and control subjects across conditions, the Friedman Two Way Analysis of Variance was used. This compared TBI subjects and controls with each other in their interactions with different

communication partners. A significant result was found for TBI subjects across the four conditions ($\chi^2_r = 9$, $p = 0.05$, $df = 3$) and control subjects ($\chi^2_r = 8.7$, $p = 0.05$, $df = 3$). To establish where the differences occurred, Pairwise Wilcoxon Matched-Pairs Signed-Ranks Tests were employed (Table 5.5). Similar to the K1 moves per minute results, a significance level of 0.05 was set to detect important trends and patterns in the data. These results are reported, however caution needs to be exercised as their statistical significance is limited by the small sample size, following Bonferroni adjustment. However, the trends indicated with the initial significance level shed light on important findings.

TBI subjects used significantly more dynamic moves with police when compared with their mothers ($T=0$, $p=0.03$). They also used more dynamic moves in the police condition than in the bus timetable condition, although this result approached significance ($T=14$, $p=0.06$). The increased use of dynamic moves by TBI subjects with police indicates the importance placed on the joint negotiation of the message.

This importance was also reflected in the control subjects' use of dynamic moves. They produced more dynamic moves with police when compared to interactions with their mothers ($T=10$, $p=0.06$). They also produced more dynamic moves

with police when compared with therapists (T=10, p=0.06). Even though the police condition consisted of the most simple enquiry, there was a greater amount of negotiation and checking regarding the accurate transfer of the message by both TBI and control subjects than in all other conditions. This would suggest the importance of the successful establishment of the interpersonal relationship in the case of the greater power imbalance in this condition compared to the other three.

5.2.2 Effect of TBI on the nature of the information exchange: partner responses

The second question addressed in this chapter is whether communication partners communicated in a different manner to TBI subjects when compared to their interactions with controls. A description of the mean frequency of K1 moves per minute, K2 moves per minute and dynamic moves per minute can be found in Tables 5.8 - 5.11.

Table 5.8 Exchange structure moves for Police across TBI and Control groups

Subjects	K1 moves/minute	K2 moves/minute	Dynamic moves/minute
TBI (n = 5)	Mean = 6.5 Range = 3.2 - 10.3 S.D. = 2.7	Mean = 1.5 Range = 0 - 2.7 S.D. = 1.0	Mean = 8.9 Range = 2.1 - 14 S.D. = 5.2
Controls (n = 4)	Mean = 8.7 Range = 7.2 - 9.4 S.D. = 1.0	Mean = 0.00 Range = 0.0 - 0.0 S.D. = 0.0	Mean = 7.2 Range = 5.1 - 11.7 S.D. = 3.2

Table 5.9 Exchange structure moves for Bus Timetable Providers across TBI and Control groups

Subjects	K1 moves/minute	K2 moves/minute	Dynamic moves/minute
TBI (n = 5)	Mean = 4.0 Range = 2.7 - 5.3 S.D. = 1.0	Mean = 0.2 Range = 0 - 0.7 S.D. = 0.3	Mean = 4.6 Range = 1.4 - 6.2 S.D. = 1.9
Controls (n = 5)	Mean = 4.9 Range = 3.1 - 7.8 S.D. = 1.9	Mean = 1.1 Range = 0.0 - 3.3 S.D. = 1.3	Mean = 3.2 Range = 2.1 - 4.3 S.D. = 1.0

Table 5.10 Exchange structure moves for Therapists across TBI and Control groups

Subjects	K1 moves/minute	K2 moves/minute	Dynamic moves/minute
TBI (n = 5)	Mean = 4.9 Range = 1.9 - 7.5 S.D. = 2.3	Mean = 0.8 Range = 0 - 1.9 S.D. = 0.8	Mean = 5.0 Range = 1.4 - 7.6 S.D. = 2.4
Controls (n = 5)	Mean = 7.1 Range = 5.4 - 8.4 S.D. = 1.3	Mean = 0.2 Range = 0.0 - 0.5 S.D. = 0.2	Mean = 2.0 Range = 1.0 - 3.7 S.D. = 1.1

Table 5.11 Exchange structure moves for Mothers across TBI and Control groups

Subjects	K1 moves/minute	K2 moves/minute	Dynamic moves/minute
TBI (n = 5)	Mean = 4.3 Range = 1.2 - 8.0 S.D. = 2.4	Mean = 1.6 Range = 0 - 5.2 S.D. = 2.1	Mean = 4.5 Range = 2.7 - 8.9 S.D. = 2.5
Controls (n = 4)	Mean = 7.5 Range = 4.4 - 9.4 S.D. = 2.3	Mean = 1.1 Range = 0.6 - 1.6 S.D. = 0.6	Mean = 3.8 Range = 3.2 - 5.2 S.D. = 1.0

Comparisons of the use of these moves were made using the Wilcoxon Matched-Pairs Signed-Ranks Test (for small samples)(Table 5.12). From these results it appeared that mothers, and to a lesser extent, police and therapists, interacted differently with TBI subjects when compared to control subjects.

Table 5.12 Comparison of Communication Partners' use of Exchange Structure elements with TBI and Control subjects using the Wilcoxon Matched-Pairs Signed-Ranks Test.

Exchange structure element	Observed value () = N	Critical value	Comments
K1 moves/min	a. T = 13 (5)	0.09*	Controls > TBI
	b. T = 12 (5)	0.15	
	c. T = 8.5(4)	0.19	
	d. T = 6 (4)	0.13**	
K2 moves/min	a. T = 6 (3#)	0.13**	TBI > Controls
	b. T = 12 (5)	0.15	
	c. T = 6 (3#)	0.13**	TBI> Controls
	d. T = 7 (4)	0.31	
Dynamic moves/min	a. T = 15 (5)	0.03 ‡	TBI > Controls
	b. T = 12 (5)	0.15	
	c. T = 6 (4)	0.44	
	d. T = 6 (4)	0.44	

a. Therapist b. Bus Timetable information service c. Police d. Mother
* With S5/C5 excluded T=10 (4) p=0.06 ** Maximum difference (TBI>Controls)
# n= 3 due to tied scores ‡ Significant at p≤ 0.05

K1 moves per minute

Four of the five therapists gave more information to controls than to TBI subjects (T=10, p=0.06). The therapist who interacted with S5 and C5 gave similar amounts of information to both subjects, however, there were qualitative differences in the type of information given. This was related to how she responded to K2 moves and also to how she followed up K1 moves made by the TBI and control subjects. The therapist was more likely to add information to comments made by C5, and respond directly to K2 moves made by the control subject (Example 5.11, Move 108; Example 5.12, Moves 146-147). In contrast, the K1 moves made to the TBI subject were more likely to be unrelated to his comments or in response to his questions. In this case, the therapist appeared to have the communicative purpose of providing information regarding TBI subject S5's goals, rather than being engaged in a discussion regarding S5's views of his goals (Example 5.15, Moves 77,78,80).

Mothers provided more information to their normal sons than to their head-injured sons, however this difference was not statistically significant. Small sample sizes for these calculations made statistical significance unachievable. However the maximum possible difference (T=6) with an n of 4 means that all mothers provided more information to the normal sons. There was no difference

in the amount of information provided by the bus timetable information service or police to TBI and control subjects.

K2 moves per minute

Therapists were more likely to ask questions of the control subjects than the TBI subjects although once again small sample sizes made statistical significance unachievable. Police were never in the K2 role, that is, they never asked questions of the control subjects, but they did make enquiries (sometimes of a personal nature) of the TBI subjects. They were therefore in the K2 role more often with the TBI subjects than with controls. In three of the five interactions with TBI subjects, and in one of the control interactions, bus information service providers made no K2 moves. There was no difference between the frequency of K2 moves by the bus timetable information service providers or mothers in their interactions with TBI and control subjects. However, mothers asked their TBI sons different types of questions when compared to their normal sons. TBI sons were asked questions which tended to check or confirm information already given or to ask questions that they already knew the answer to (i.e., teaching moves or dK1 moves)(Example 5.17). In contrast, normal sons were asked about their current activities and recent happenings, i.e., for new information (Example 5.18).

Example 5.17 - TBI subject S1 - Mother condition
Moves 11-17 S = TBI subject M= Mother

11	┌	dK1	**M : You tell me a few things you did.**
12	│	dK1	**M : What days did you go?**
13	├	K2	S : .Monday, Wednesday
14	└	K1	**M : Yes,**
15	┌	dK1	**M : and what did you do on Mondays?**
16	├	K2	S : Wasn't that the day, that afternoon we went to the swimming pool?
17	└	K1	**M : Yes..That's right**

Example 5.18 Control subject C1 - Mother condition
Moves 48-55 C = control subject M=Mother

48	┌	K2	M : You found Leanne alright?
49	└	K1	C : Yeah
50	└	K2f	M : Oh that's good
51	┌	K2	M : Is that changed very much?
52	├	K1	C : Oh no I don't know
53	│	cf	M : No it's all much of a muchness
54	│	rcf	C : No it's all the same
55	└	K2f	M : OK

Dynamic moves per minute

Therapists produced significantly more dynamic moves with TBI subjects than with controls (T=15, p=0.03)(Table 5.12). There were no significant differences in the overall frequency of dynamic moves in other conditions, however the nature of dynamic moves varied across conditions. For example, therapists' responses to the TBI subjects' requests for clarification, confirmation and repetition formed the majority of their dynamic moves.

As Example 5.19 shows, police tended to rely on dynamic moves which served to check that TBI subjects had taken in the information that was being provided to them. The policeman checks with the TBI subject after each piece of information has been given, and this sometimes occurs mid-sentence. In the control condition (Example 5.20) this checking behaviour rarely occurs, indicating that the policeman is satisfied that the control subject is able to take in the information he is giving. This constant checking behaviour with the TBI subjects gave them little credit for being aware of organisations such as the Roads and Traffic Authority, or driving schools, even though they were all familiar with these. Such behaviour has the effect of disempowering the TBI subject.

Example 5.19 TBI subject S1 - Police condition
Moves 29 - 44 S = TBI subject P = Policeman

29	K1	P : Um what what what you have to do is if you can um if you have to go to the R.T.A.¶
30	K1	P : They'll put your application in to get a license
31	bch	S : Sure
32	check	**P : Right? If you can understand that**
33	rcheck	S : Yeah
34	K1-Fg	P : But prior to that, um what you have you have to go
35	check	**P : ah you know a driving school?**
36	rcheck	S : Yeah
37	K1	P : Right and they um have rehabilitation people that ah can ah put you through oh like your driving lessons,
38	bch	S : Sure
39	K1-Fg	P : and then they decide whether you know
40	cp	S : Whether you're capable
41	rcp	P : Yeah whether you're then capable to go and get your license

42	bch	S : Sure
43	check	**P : Right?**
44	K2f	S : OK then

¶R.T.A. = Roads and Traffic Authority, a government organisation in NSW

Example 5.20 Control subject C1 - Police condition
Moves 39 - 42 C = control subject P = Policeman

39	K1	P : so you've still gotta make the application to the R.T.A. of course
40	K1	P : um and that's once once that application's made
41	K1	P : of course then they've gotta go then they've through all the driving lessons and whatever
42	K2f	C : Oh right

5.2.3 Comparison of partners with each other

A final question to be answered in this chapter is with regard to possible differences between communication partners in the way they interacted with TBI and control subjects. To examine this issue partners were compared with each other (i.e., Police vs. Therapists vs. Mothers vs. Bus Timetable service providers) during interactions with TBI subjects and also with controls. The Kruskal-Wallis One-Way Analysis of Variance was used to identify whether differences existed between communication partners in their interactions with TBI and control subjects (Table 5.13). If the null hypothesis was rejected, thus indicating that differences existed, comparisons were made using the Mann Whitney U Test (Table 5.14).

Table 5.13 Comparison of communication partners (i.e., Therapists vs. Police vs. Mothers vs. Bus Timetable Service Providers) with TBI and Control Subjects using the Kruskal-Wallis Test

Dependent variables	With TBI subjects	With Control subjects
K1 moves/min	H = 3.23 p = 0.358 (df = 3)	H = 7.1 p = 0.06† (df = 3)
K2 moves/min	H = 4.635 p = 0.25 (df = 3)	H = 10.33 p = 0.01 § (df = 3)
Dynamic moves/min	H = 4.92 p = 0.178 (df = 3)	H = 11.33 p = 0.01 § (df =3)

§ Significant at p≤ 0.01
† Approaching significance at p≤ 0.05

Table 5.14 Pairwise Mann Whitney U Test of Communication Partners' use of K1 moves/minute; K2 moves/minute and Dynamic moves/minute with Control Subjects

Dependent variables	Observed value	Critical value at $\alpha = 0.05$	Comments
K1 moves/min	1. U = 4‡	U≤ 4	T>B
	2. U = 7	U≤ 3	
	3. U = 3‡	U≤ 3	P >T
	4. U = 4	U≤ 3	
	5. U = 1§	U≤ 3	P >B
	6. U = 6	U≤ 2	
K2 moves/min	1. U = 5	1. U≤ 4	
	2. U = 0 §	2. U≤ 2	M>T
	3. U = 0 §	3. U≤ 4	T>P
	4. U = 3	4. U≤ 2	
	5. U = 0 §	5. U≤ 2	B>P
	6. U = 0 §	6. U≤ 1	M>P
Dynamic moves/min	1. U = 4 ‡	1. U ≤ 4	B>T
	2. U = 3	2. U ≤ 2	
	3. U = 0 §	3. U ≤ 2	P>T
	4. U = 6	4. U ≤ 2	
	5. U = 0 §	5. U ≤ 2	P>B
	6. U = 1 ‡	6. U≤ 2	P>M

‡ Significant at p≤ 0.05 1. T vs B 2. T vs M 3. T vs P 4. B vs M 5. B vs P 6. P vs M §Significant at p≤ 0.01

K1 moves per minute

There were no significant differences between communication partners in the frequency of K1 moves provided to TBI subjects ($H=3.23$, $p=0.358$, $df = 3$) (Table 5.13). In contrast, when talking to the control subjects, partners varied the amount of information they gave ($H=7.1$, $p=0.06$, $df=3$). Police gave the most information (P>T, $U=3$, $p \leq 0.05$; P>B, $U=1$, $p \leq 0.01$), followed by therapists (P>T, $U=3$, $p \leq 0.05$) and mothers, with the least amount of information being provided by the bus timetable people (P>B, $U=1$, $p \leq 0.01$)(Table 5.14).

K2 moves per minute

Police made no moves in the K2 role with control subjects, and therefore made the fewest K2 moves when compared to all other partners (T > P, $U=0$, $p \leq 0.05$; B > P, $U=0$, $p \leq 0.01$; M > P, $U=0$, $p \leq 0.01$). Mothers made the most K2 moves with their normal sons when compared with other partners, possibly reflecting their close social distance. Therapists and police produced more K2 moves with TBI subjects than the bus timetable people, although this did not reach statistical significance.

Dynamic moves per minute

There was a clear pattern of difference between partners in their use of dynamic moves with control subjects. Police used the most dynamic moves (P>T, U=0, $p \leq 0.01$; P>B, U=0, $p \leq 0.01$; P>M, U=1, $p \leq 0.05$) followed by mothers, which were greater than bus timetable persons' use. Therapists used the least amount of dynamic moves with controls. In contrast, there was not such a clear pattern with the TBI subjects. Therapists and police used more dynamic moves than the bus timetable people, however these results did not reach statistical significance.

5.3 Discussion

This chapter examined three aspects of information seeking interactions by TBI and control subjects. The first area of investigation examined the differences between TBI and control subjects in the way information was exchanged. The second part of this chapter compared interlocutors in their interactions with TBI and controls, and finally, the interlocutors were compared with each other. Results highlighted the difference between the way information was exchanged with TBI subjects compared with normal subjects.

5.3.1 TBI vs. Controls in information requesting interactions

TBI subjects differed from controls in the way they provided, requested and negotiated information exchange. It should be stated from the outset that some of the differences between TBI and control subjects were directly related to the choices made by their communication partners. This reflects the joint construction of discourse as an ongoing negotiation of meaning (Fairclough, 1992).

TBI subjects have been described as having difficulty with interpersonal relationships, and that this (in combination with other psychosocial and cognitive factors) may result in poor social and vocational outcomes (Marsh & Knight, 1991; Tate et al., 1989). Differences found in this research between TBI and control subjects reflects this reported difficulty with sensitivity to situation and the overall context. Exchange structure analysis allowed for an investigation of these interpersonal failings which have been difficult to capture in other analyses. The ability to adjust to varying contexts may be restricted in the TBI population as a result of cognitive impairments, such as poor judgment and impaired flexibility. But exchange structure also provided a description of the interpersonal strengths of TBI subjects. Some of the patterns produced by control subjects were observed in TBI subjects. TBI subjects were not as sensitive

to context as the control subjects, however some were able to vary the moves they chose according to the status and social distance of their communication partner and the type of request they had been asked to make. This difference across communication partners has not been reported previously.

An example of one of the TBI subjects' strengths was in their use of dynamic moves with the therapists. The higher proportions of dynamic moves used by the TBI subjects in the therapist condition suggest that TBI patients assumed a significant part of the communicative burden. While other studies have described communication partners of TBI subjects as bearing a greater communicative burden (Coelho et al., 1991), these results suggest that the TBI subjects were engaging in a great deal of negotiation of meaning in order to acquire the information needed. That is, by using a greater proportion of dynamic moves they were assuming a large part of the communicative burden to ensure that they had received the message accurately.

It is suggested that some of the behaviour of the person with TBI is the product of the opportunities afforded them by their communication partner. The results of this study indicated that interlocutors were different in the way they exchanged information when speaking with TBI subjects, compared with the way

they exchanged information with controls. The effect a communication partner may have on the discourse of a person with TBI may be to penalise them and possibly disempower them. Some negative behaviours by interlocutors included a failure to request information, the use of teaching interactions which asked for information the partner already had, and the overuse of dynamic moves to check information. When the communication partner was not in a deferent role (such as the bus timetable person), more equal opportunities were given to the subjects with TBI so that these interactions more closely matched the controls. This has important implications for assessment and treatment of communication following TBI.

5.3.2 Effect of TBI on the nature of information exchange: Partner Responses

Communication partners interacted differently with TBI subjects than with control subjects. This included increased information giving to control subjects by therapists and mothers; more requests for information to controls by therapists; more requests to TBI subjects for information by police, and reduced information giving and a greater use of dynamic moves by therapists with TBI subjects.

This study shows that the same interlocutors, including therapists, will produce widely different communication behaviour according to whether the person they are talking to has a TBI. One of the important implications of this is the way communication "disorder" is evaluated following TBI. In other studies, TBI patients are commonly evaluated interacting with therapists. In this study, therapists behaved quite differently with TBI subjects when compared with control subjects, and they also behaved differently to family members and community agencies. An important observation was the fact that therapists gave less information to TBI subjects, and did not ask them questions. They were also noted to produce more dynamic moves than other communication partners. This took the form of much more checking behaviour and appeared to be used as a therapeutic device to encourage more appropriate communication. In developing therapy goals and plans, the evidence would suggest that some TBI subjects may well be misjudged by being evaluated on their interactions with therapists.

There was also a significant difference in the way the mothers communicated with their TBI and normal sons. Mothers asked the most questions of their normal sons when compared to other interlocutors. This may have been due to the mother's close social distance, and the equal power with their normal sons.

In contrast, the mothers asked fewer questions of their TBI sons when compared to other interlocutors, which may indicate a change in their relationship and in the power imbalance as a result of the TBI. Parental style with TBI adults has been reported to change, with a resumption of a former parenting role after the occurrence of the injury (Hall, Karzmark, Stevens, Englander, O'Hare & Wright, 1994, Kreutzer, Gervasio & Camplair, 1994). In a study which examined the psychological status and family functioning of sixty two primary caregivers of people with TBI, 74% reported problems with "family communication" (Kreutzer et al., 1994). This was measured on the Family Assessment Device (Epstein, Bishop & Levin, 1978) which assesses the caregiver's perception of family functioning including the areas of problem solving, communication, roles, emotions, interest in activities and behaviour control. The communication subscale addressed the degree to which family members openly and clearly expressed their thoughts and feelings. The reduced frequency of requesting behaviour by mothers with their TBI sons in comparison to other interlocutors may be reflecting an interactional problem which has developed possibly over a long time period. Four of the five TBI subjects were more than four years post-injury. The patterns of reduced requesting may well have been developed as a compensatory strategy to limit the output of the TBI subjects and therefore reduce the effort of speaking with them. The effect of this was to give fewer

opportunities to the TBI subjects to provide information and therefore contribute as a more equal participant.

Finally, the bus timetable condition provided similar communication opportunities for TBI and controls. The TBI subjects were positioned as customers who required an information giving service to be carried out by the bus timetable person. With this contextual configuration in place, TBI subjects demonstrated that they were able to request and be provided with information to a similar extent to the controls. These findings are significant as they demonstrate that TBI subjects have intact social communication skills which are fostered when they are placed in powerful interactional roles.

5.3.3 Comparison of partners with each other

Comparing communication partners with each other provides some indication of whether the predetermined variation of tenor was reflected in differences in the use of exchange structure. The first measure to be discussed is the frequency of K1 moves per minute. There was no variation between communication partners in the frequency of information they provided to TBI subjects, when compared with each other. In contrast, interlocutors varied considerably from each other in their information giving with controls, with the most information

being provided by police and the least by the bus timetable information service. These results were in contrast to what was expected, given that the most complex enquiry was the bus timetable, and the least complex was that made to the police. The interpersonal demands of the task may have influenced the results, with the police being aware of the power imbalance in the interaction, and compensating for this by providing large amounts of information. This behaviour from the police was seen also with TBI subjects, with larger amounts of information being provided by the police than the bus timetable people although this failed to reach statistical significance. Bus timetable people were in an equal social relationship with the control subjects, and therefore they did not need to compensate.

Communication partners were also compared with each other in their frequency of information requesting. There were patterns of difference when examining interlocutors in control interactions, however these variations were less obvious with TBI subjects. The clear differences between interlocutors in their interactions with controls may demonstrate that the tenor differences (i.e., differences in social distance, power and affect) were more clearly realised than in TBI interactions.

When speaking with control subjects, interlocutors varied from each other in their use of dynamic moves. Dynamic moves usually occur in pairs, and this result may reflect the maximum amount of joint negotiation which was put into the information exchange between police, possibly due to power relationships, in contrast to the significantly reduced amount of negotiation which was required in the therapist interactions. Perhaps the therapists were prescribing the information clearly, with no need for checking or clarification. Therapists may also have set up interactions so that they were not questioned by control subjects. Mothers may have used more dynamic moves with their normal sons, because their interactions frequently turned to topics of a personal nature, once the main enquiry had been made. They may have felt more able to question their normal sons due to their close personal distance. These differences clearly demonstrate the varying interpersonal relationships which needed to be established during the process of information exchange.

Variation across communication partners in their use of dynamic moves did not occur with TBI subjects. This lack of variation could suggest that TBI subjects were not as responsive to the different interpersonal requirements of the four conditions. As discussed previously, dynamic moves were used for different purposes according to the power relationships involved. There was a greater

power imbalance in the police interaction than in the bus timetable condition. This imbalance was reflected in the greater amount of dynamic moves used by police to check that their information giving was successful.

When communication partners were compared with each other, they were noted to vary according to the amount of information giving, information requesting and use of dynamic moves. There were clear patterns of difference across communication partners in their interactions with control subjects. These patterns became less distinct with TBI subjects. It appeared that partners became more alike in their interactions with TBI subjects, because they used similar strategies, such as use of teaching moves (e.g., therapists and mothers). There are a number of contributing features which could explain both the variability in control interactions and the lesser degree of variability with TBI. The four conditions were designed to vary according to the tenor relationships involved. Tenor can vary according to status (or power) and social distance (or familiarity). The police condition was posited to represent one extreme of power imbalance and the bus timetable condition, the other. Therapists and mothers varied according to the level of perceived power in the interaction. Social distance was at its maximum with the police and bus timetable people ; at its minimum with the mothers and somewhere in between for the therapists. These

relationships were reflected in the way information was exchanged. The bus timetable condition was the most beneficial for TBI subjects as the context determined that they were the customer, and therefore in a powerful role. This role gave TBI subjects the opportunity to request and be provided with information to a similar extent to the controls. The communication partner and the contextual configuration therefore has a powerful influence on the way a person with TBI can interact. These results underscore the value of assessing people with TBI with a range of communication partners, who vary according to status and social distance relationships.

5.4 Summary

5.4.1 List of findings

Study 1 - Information requesting interactions

Investigation	Finding
TBI vs. CONTROLS **K1 moves/minute**	TBI > Controls with Police No other significant statistical differences TBI use dK1 exchanges with mother Control subjects' K1moves followed up by communication partner TBI different across communication partners but controls the same With TBI: P>T M>T
K2 moves/minute	TBI > Controls with Therapist partly due to dK1 exchanges by T No other significant differences
Dynamic moves/minute	TBI > Controls with Therapist TBI and Controls different across communication partners With TBI: P>M P>B With Controls: P>M P>T
PARTNER RESPONSES **K1 moves/minute**	Therapists: Controls>TBI Mothers: Controls>TBI No difference with Bus or Police
K2 moves/minute	Therapists: Controls>TBI Police never in K2 role with controls: ∴TBI>Controls with police Mothers: No difference in frequency but in quality Bus: No difference
Dynamic moves/minute	Therapists: TBI>Controls No other differences in frequency, but in quality with police.
COMPARISON OF PARTNERS WITH EACH OTHER (P vs. T vs. M vs. B) **K1 moves/minute**	No difference with TBI Difference with Controls: P>T>M>B
K2 moves/minute	No statistical difference with TBI, although trends: T>B P>B Difference with controls: T>P B>P M>P
Dynamic moves/minute	No statistical difference with TBI Controls: P>M>B>T

5.4.2. Conclusions

This chapter has investigated TBI and controls in information requesting interactions in order to answer three questions. The first question, which addressed whether TBI and control subjects differed from each other in their use of exchange structure elements was answered with clear differences being demonstrated between the ways information was requested and given by TBI and controls. Previous research has confirmed that TBI subjects differ from controls in interactions with research assistants and speech-language pathologists, and so, to some extent this result was not surprising. The second question evaluated whether interlocutors varied their use of exchange structure when interacting with TBI subjects compared with controls. This showed that there were significant differences in the way information was given to and requested of TBI subjects when compared with controls. TBI subjects were asked fewer questions, questioned more regarding the accuracy of their messages and were less likely to have their contributions followed up than the controls. As communication is viewed as a joint negotiation of meaning in this thesis, a connection was made between the way interlocutors communicated with TBI subjects and the limited communication opportunities that were made available to them. It appeared that in those interactions where a greater power imbalance existed (e.g., with the police) or where there was an institutional relationship (such as therapist-

patient), these limited opportunities were exacerbated. In contrast, when TBI subjects were placed in the more powerful requesting role of customer with the bus timetable service provider, they were given similar opportunities to controls. The third question compared interlocutors with each other to evaluate whether a variation of tenor resulted in different use of the exchange structure elements. This demonstrated that interlocutors varied from each other more with the control subjects than they did with the TBI subjects. The results of the bus timetable condition, however appeared to be most similar for TBI and controls, when comparing interlocutors.

These findings therefore led to the development of the second study, which was designed so that the person with TBI was placed in an information giving role in a context where the balance of power was in their favour. The change from information requester to information giver, as well as being placed in a powerful role in the interaction, was designed in accordance with critical discourse theory, which is directed at finding ways of empowering clients through the discourse practices they engage in (Fairclough, 1992). The results of this study are described in the next chapter.

Chapter 6
Exchange structure analysis results of TBI and control subjects in information giving and requesting interactions

6 Information Giving in TBI discourse

In the previous chapter, TBI subjects were found to differ from controls in the information exchange resources they used in information requesting interactions. For example, TBI subjects gave more information to the police than did the matched control subjects, which may have been due to poor judgment of the tenor of this interaction. These results were expected, but what was not predicted was the significant differences in the way interlocutors responded to TBI subjects when compared with controls. For example, mothers and therapists gave significantly more information to the control subjects than TBI subjects, even though the same frequency of questions were asked by both groups. The ways in which information exchange was negotiated also varied between TBI and control interactions. For example, therapists checked on the accuracy of information given by the TBI subjects which did not occur with controls. Police officers were also more likely to check that the person with TBI had understood the information they had given, when this rarely occurred with controls. Finally, therapists and mothers used teaching exchanges, where they asked for information that both parties already knew the answer to and asked fewer questions of TBI subjects than they did with controls. In contrast, the bus

timetable condition, which represented a situation where the subjects were in relative position of power as a customer, produced similar patterns of exchange structure results in TBI and control interactions.

It was suggested that therapists', police and mothers' varied communication with TBI subjects was linked to the power imbalance in these interactions which resulted in negative consequences for the person with TBI. By being asked fewer questions the TBI subjects were not given the same opportunities as controls to give information, and as the accuracy of the information TBI subjects gave was frequently questioned, their information giving was devalued.

The second study was developed to assess whether the context could be structured to place the person with TBI in a powerful information giving position. By placing subjects in this position the question of interest was whether TBI subjects would be able to give information to the same extent as control subjects, and moreover whether communication partners who were in a deferent position would respond to both groups in a similar manner.

Manipulating speaker role for TBI and control subjects from information requester to information giver has not previously been addressed. To demonstrate that the same subjects could indeed respond to changes in the contextual configuration, an additional speaking condition was included in this study. TBI and control subjects were placed in an information requesting role with the researcher to answer this question. The following section briefly outlines the methodology which was used to achieve these speaking conditions.

6.1 Methodology

To investigate TBI subjects in an information giving role, they were asked to speak to two Year 11 school boys (who were on average 16 years of age) as part of a community awareness driver education program. The TBI subjects were matched with subjects who had sustained a spinal injury. The school students were briefed prior to data collection to compare TBI with spinal injury and the effects these had had on subjects' lives and future prospects by interviewing both subjects. The interviews lasted approximately 20 minutes. This condition therefore placed TBI and control subjects in a relative position of power in the interaction. The information requesting condition consisted of the researcher asking TBI and control subjects during a wrap-up session whether they had any questions regarding the research project. Twenty eight transcripts (seven TBI

subjects and seven matched controls across two speaking conditions - student and researcher) were scored according to the exchange structure elements described in Chapter 2. Further information regarding the details of the method can be found in Chapter 2. Three types of moves were compared including:

K1 moves per minute which is considered the rate of information giving within interactions

K2 moves per minute which is interpreted as the rate at which interactants are in the position of not having information and are either requesting the information or being given the information (as in a teaching exchange), and

Dynamic moves per minute which is the rate of negotiating and tracking of information which is needed for information exchange to be successful.

The number of these exchange structure elements divided by the total time to give a frequency measure of exchange moves per minute appeared to be the most sensitive measure of information exchange. For example, a measure such as moves per exchange provides little information regarding who gave the information, how the information giving was initiated, or the relative frequency of information giving and requesting. While these data are reported as individual moves per minute, it is with the recognition that all moves occur within the context of a full exchange. That is, a K2 (information requesting) move cannot

occur in isolation but must be followed by a K1 (i.e., information giving) move, for a complete exchange of information to occur. It is therefore recognised that interactions are two-way negotiated achievements (McTear & King, 1991) and that the communication behaviour of one interactant will determine the choices available in the next turn.

To examine the exchange structure of information giving and requesting interactions, three comparisons have been made. The first comparison addresses the differences between TBI and control subjects in the two conditions - student and researcher. Secondly, the interlocutors are compared when speaking to TBI vs. controls and finally, interlocutors are compared with each other.

6.2 Information Giving and Requesting Interactions

6.2.1 TBI vs. control subjects' use of exchange structure

A description of the total length of transcripts (in total number of moves, total time, total number of exchanges and moves per exchange) are reported in Appendix 12.4.8. The mean frequency, range and standard deviations of K1 moves per minute, K2 moves per minute and dynamic moves per minute by TBI subjects can be found in Table 6.1 and for the control subjects in Table 6.2.

Table 6.1 Exchange structure moves by TBI subjects across Student and Researcher conditions

Speaker condition	K1 moves/minute	K2 moves/minute	Dynamic moves/minute
Students (n = 7)	Mean = 7.7 Range = 3.2 - 13.2 S.D. = 3.1	Mean = 0.6 Range = 0 - 1.6 S.D. = 0.6	Mean = 1.7 Range = 1.0 - 2.8 S.D. = 0.6
Researcher (n = 7)	Mean = 4.65 Range = 1.25 - 9.0 S.D. = 3.1	Mean = 1.6 Range = 0.12 - 3.8 S.D. = 1.5	Mean = 3.4 Range = 2.0 - 5.5 S.D. = 1.4

Table 6.2 Exchange structure moves by control subjects across Student and Researcher conditions

Speaker condition	K1 moves/minute	K2 moves/minute	Dynamic moves/minute
Students (n = 7)	Mean = 10.34 Range = 6.5 - 15.3 S.D. = 3.5	Mean = 0.3 Range = 0.05 - 0.6 S.D. = 0.2	Mean = 2.1 Range = 1.2 - 4.5 S.D. = 1.1
Researcher (n = 7)	Mean = 4.2 Range = 1.4 - 6.0 S.D. = 1.8	Mean = 0.6 Range = 0 - 1.8 S.D. = 0.6	Mean = 4.2 Range = 2.3 - 8.0 S.D. = 2.1

Measures of K1 moves per minute, K2 moves per minute and dynamic moves per minute were compared using the Wilcoxon Signed-Ranks Matched-Pairs Test to discriminate differences between TBI and control subjects in the Student and Researcher conditions (Table 6.3). Comparisons were also made of TBI and control subjects across conditions (i.e., TBI subjects in Student condition vs. TBI subjects in Researcher condition; Control subjects in Student condition vs. Control subjects in Researcher condition)(Table 6.4).

Table 6.3 Comparison of TBI vs. control subjects' use of exchange structure elements across the conditions of Student and Researcher using the Wilcoxon Matched-Pairs Signed-Ranks Test

Exchange structure element	Observed value	Critical value	Comments
K1 moves/minute	a. T = 4 (n = 7)* b. T = 13 (n = 7)	p = 0.055 † p= 0.47	Controls>TBI
K2 moves/minute	a. T = 4 (n = 5) b. T = 6 (n = 7)	p = 0.219 p = 0.109	
Dynamic moves/minute	a. T = 4 (n = 5) b. T = 3 (n = 3)	p = 0.219 p = 0.63	

a. Student
b. Researcher
† Approaching significance
* n varies according to tied ranks

Table 6.4 Comparison of TBI and Control subjects' use of exchange structure elements across the conditions of Student and Researcher using the Wilcoxon Matched-Pairs Signed Ranks Test (i.e., TBI (with Students) vs. TBI (with Researcher) and Controls (with Students) vs. Controls (with Researcher)

Exchange structure element	TBI (with students) vs TBI (with researcher)		Controls (with students) vs Controls (with researcher)	
	Observed value	Critical value	Observed value	Critical value
K1 moves/minute	T = 5	p = 0.07*	T = 0	p = 0.008 ¶ (Student>Researcher)
K2 moves/minute	T = 1	p = 0.01 § (Researcher>Student)	T = 11	p = 0.344
Dynamic moves/minute	T = 1	p = 0.01 § (Researcher>Student)	T = 0	p = 0.008 ¶ (Researcher>Student)

§ Significant at p≤ 0.01
¶ Significant at p≤ 0.001
* Five out of seven TBI subjects had a higher frequency of K1 moves/min in student condition

K1 moves per minute

One of the key questions of this study was whether a manipulation of the context would enable TBI subjects to be in a position of providing similar amounts of information to the students as control subjects. While control subjects gave marginally more information to students than TBI subjects, this result only approached significance (T=4, p=0.055, Table 6.3). The similarity between TBI and control interactions was in part due to the fact that they were asked a similar number of questions by the boys (Table 6.8, p. 270). Despite the frequency of information giving being approximately the same, there were significant qualitative differences in the way TBI subjects imparted information. They used a range of strategies, including telling jokes and using teaching exchanges to get their message across.

Joke Telling

Joke telling appeared to perform a number of interpersonal language functions as well as being a way of providing information, but this strategy is not accounted for in the exchange structure analysis. It is therefore being reported separately. Joke telling occurred in TBI and control interactions with students as the following examples demonstrate.

Example 6.1 TBI subject S4 - Joke Telling with Boys
Moves 120 - 122 S = TBI subject A&B = students

120	K1	S : then I think they were happy with the way I came out of it because the doctors towards the end of my coma said to mum and dad and to my brother they said you know if I pulled out of it I would be lucky to be a vegetable for the rest of my life
121	joke	S : So I'm not doing too bad for a brussel sprout am I?
122	rjoke	A & B : (laugh halfheartedly) No

Example 6.2 TBI subject S4 - Joke Telling with boys
Moves 299 - 314 S = TBI subject A&B = students

299	K2	B : Did you ever think about ending it all?
300	K1	S : Oh definitely
301	K1	S : You know I I thought about that quite often
302	K1	S : and I probably still do at times
303	K1	S : but it's against my religion
304	cfrq	B : religion?
305	rcfrq	S : (nods)
306	clrq	B : which is?
307	rclrq	S : Catholic
308	cf	A : Roman Catholic
309	joke	S : No I I stay still
310	rprq	A : What?
311	rrprq	S : I don't roam around
312	joke	S : I just stay still
313	rjoke	A : (Looks and smiles)
314	rjoke	S : (smiles and looks away)

Contrast this with a joke told by a control subject early in the interaction :

Example 6.3 Control subject C2 - Joke telling with boys
Moves 35 - 46 A&B = Students C = control subject

35	K1	C : and um I saw this hand like this and I ask this I ask the XX well what do you think about that you know having an injury at this level ah leading you life in this chair
36	K1	C : what do you think you'd do about that?
37	K1	C : or how would you react?
38	K1	C : and this you know country kid up the back I think he comes from a property cause I asked them about you know who rides horses and motorbikes and that
39	bch	A : (nods)
40	K1	C : and this kid sort of up the back in a real sort of country drawl he's gone "well they'd have to put you down"
41	K2f	A : (laughs)
42	K2f	B : (laughs)
43	K1	C : something like this you know
44	joke	C : Reckon I got one the other day there was this kid who reckoned his goldfish had been a paraplegic three times
45	rjoke	A: (laughs)
46	rjoke	B : (laughs)

Given the advantages of being liked it is understandable why people engage in considerable effort to get others to like them. Humour serves as a face saving device, as a way of establishing solidarity and of preserving a person's identity.

The jokes told by TBI subjects were usually puns and very concrete. Control subjects often made jokes by telling funny stories, and they usually did this early in the interaction, possibly as a way of establishing credibility and rapport. One TBI subject told jokes throughout the entire interaction so that by the end the boys were making up their own concrete responses (Example 6.4):

Example 6.4 - TBI subject S6 Joke Telling with Boys
Moves 348-362 S = TBI subject A&B = students

348	joke	S : Yeah yeah and do you do you do you know there's one thing I want to tell you
349	joke	S : Do you know how how are you to sleep?
350	joke	A : What?
351	joke	S : How are you to sleep?
352	joke	A : How?
353	joke	S : on a bed
354	joke	A : (laughs)
355	joke	B : (laughs)
356	joke	S : And do you know how you are to eat?
357	joke	A : At a table?
358	joke	S : No
359	joke	B : With a knife and fork?
360	joke	S : No on a clean plate on your own plate
361	joke	A : (laughs)
362	joke	B : (laughs)

Teaching exchanges

The teaching exchange or dK1 lead exchange was also used as an information giving resource by three of the TBI subjects in the student condition and one TBI subject used this exchange type with the researcher. It was not used as a classic teaching strategy, however; as the final moves were not always used by TBI subjects to provide the correctness of a response given by the school students. Rather, TBI subjects appeared to use this strategy as a way of indicating that they had information that they wanted to give to the school students, similar to the way children commence information giving with adults (e.g., guess what?). Therefore, rather than being used as a powerful information giving strategy it occasionally weakened the information giving process, as students could choose to not answer but instead respond with another question (Example 6.5).

Example 6.5 TBI subject S3 - Student condition
Moves 100- 106 S = TBI subject A = Student

100	**dK1**	**S : You know what it costs me to get in a cab now from my place to Bankstown?**
101	clrq	A : Where do you live at?
102	rclrq	S : Greenwich
103	clrq	A : That's near North Sydney isn't it?
104	rclrq	S : Yeah
105	bch	A : (nods)
106	rclrq	S : The closest station is Wollstonecraft

This strategy was not used by any of the control subjects in either condition. The following two examples show how the TBI subjects were able to convey information through the use of the dK1-lead exchange (Examples 6.6-6.7). S3 used the dK1 exchange to repeat information regarding his accident. In Example 6.6 he also asserts his more powerful role with the use of an expletive, an option that was not available to the school students. The third example provides another instance of an incomplete dK1-lead exchange (Example 6.8). In this case, the student has asked S6 about his work to which he does not respond. Instead, he is distracted by a supposed friend calling from outside, although no external voice is evident on the recording. This results in a challenge by the students. The dK1 exchange is then employed by the TBI subject, possibly as a way of taking the floor, however his continued distractibility and failure to have any information to impart results in this being unsuccessful. Finally, S6 resorts to asking a question about the immediate environment which leads to a successful exchange of information. In this case, the boys are unable to direct the course of the interaction as their own questions are not being answered, and therefore they submit to the TBI subject's questions.

Example 6.6 - TBI subject S3 - Student condition
Moves 37-41 S = TBI subject A = Student

37	⌐	dK1	**S : You know what they gave the guy who hit me?**
38	├	K2	A : No what?
39	├	K1	S : 12 months
40	├	K2f	A : (shakes head)
41	└	K1	S : and a two hundred dollar fine

Example 6.7 - TBI subject S3 - Student condition
Moves 351-355 S = TBI subject A = Student

351	⌐	dK1	**S : You know how long my court case took?**
352	├	K2	A : mm
353	└	K1	S : three fuckin' minutes
354		cfrq ↓	A : three minutes?
355		rcfrq ↓	S : Yeah

Example 6.8 TBI subject S6 - Student condition
Moves 445 - 456 S = TBI subject A&B = Students

445		K2	A : So do you do any work of any sort?
446		NR¶	S : mm (looking up)
447		K1 ↓	S : Your friend is calling you
448		cfrq ↓	B : me?
449		chall	A : I don't think so
450	⌐	dK1	**S : You know you know what I wanna do like I always do**
451	├	K2	B : what
452	├	K2	B : (lifts head)
453	⌐	K2	S : yeah when when when is when is recess around here?

454	K1	B : Oh about now in a couple of minutes
455	cf	S : in a couple of minutes
456	rcf	B : Yeah

¶NR = No response

As the contextual configuration was designed so that TBI and control subjects were in an information giving role in the student condition and in an information requesting role in the researcher condition, it was expected that TBI and control subjects would be in the K1 role more often in the student condition and in the K2 role more often in the researcher condition. Five of the seven subjects evidenced a higher frequency of K1 moves per minute in the student condition, although this failed to reach statistical significance on the Wilcoxon Matched-Pairs Signed-Ranks Test (T=5, p = 0.07)(Table 6.4, p. 257). Control subjects were in the K1 role significantly more often in the student condition (T=0, p=0.008)(Table 6.4). The two cases where TBI subjects gave more information to the researcher than the controls demonstrates the heterogeneity of TBI. One TBI subject (S4), initiated a number of information giving (K1-lead exchanges) with the researcher regarding topics such as the circumstances of the injury and society's response to disabled people. Another TBI subject (S6) made few K1 moves with both the students as a result of joke telling (see Example 6.4), and with the researcher due to a lack of initiation. There were marginally more K1

moves in the researcher condition due to the researcher's questions which appeared to be an attempt to keep S6 on track.

K2 moves per minute

Two comparisons are reported in this section. The first is a comparison of TBI vs. control subjects in their use of K2 moves with students and with the researcher. This comparison was made using the Wilcoxon Matched-Pairs Signed-Ranks Test and found no difference in the use of K2 moves by TBI vs. control subjects in the student condition ($T=4$, $n=5$, $p = 0.219$) or in the researcher condition ($T=6$, $n=7$, $p= 0.109$)(Table 6.3, p. 257).

Given that TBI and control subjects were expected to primarily be asking for information in the researcher condition and giving it in the student condition, a second comparison was made of TBI and control subjects' use of K2 moves in the researcher condition compared with the student condition using the Wilcoxon Matched-Pairs Signed-Ranks Test. Results indicated that TBI subjects were in the K2 role more often in the researcher condition than in the student condition, as was expected ($T=1$, $p=0.01$, Table 6.4). However, the control subjects produced similar frequencies of K2 moves in both conditions ($T=1$, $p=0.34$, Table 6.4). This can be explained by a number of reasons. An

examination of the types of K2 moves which were made by TBI and control subjects indicated that some TBI subjects asked the researcher questions which were not relevant to the purpose of the discussion, such as asking how they had performed with the students, whereas this occurred rarely in control interactions. Two TBI subjects (S3 and S6) were also noted to repeat questions. In one case K2 moves were made by TBI subject S6 within a teaching interaction initiated by the researcher. Control subjects' use of K2 moves was limited to requesting information regarding the research project, the potential usefulness of the results and future plans.

Dynamic moves per minute

In the student condition no significant difference was found between TBI and control subjects in their use of dynamic moves ($T = 4$, $n=5$, $p=0.219$)(Table 6.3). This result was replicated in the researcher condition ($T=3$, $n=3$, $p=0.63$). To establish whether TBI and control subjects varied their frequency of dynamic move usage across conditions, comparisons were made using the Wilcoxon Matched-Pairs Signed-Ranks Test. This showed that both TBI and control subjects used a greater frequency of dynamic moves with the researcher than with the students (TBI: $T=1$, $p=0.01$; Controls: $T=0$, $p=0.008$)(Table 6.4).

To further examine the nature of these differences, the most commonly used dynamic moves were identified for TBI and control subjects across both conditions (Table 6.5). This revealed significant qualitative differences where the most common dynamic move was the backchannelling move in 6/7 TBI-Researcher interactions and in 7/7 Control-Researcher interactions. In contrast, in the student condition, backchannelling was the most common dynamic move in only 2/7 TBI-Student interactions and 3/7 Control-Student interactions.

Table 6.5 Most commonly used dynamic moves by TBI and Control subjects across speaking conditions‡

	TBI	CONTROLS
STUDENT CONDITION	Backchannelling S1*,S2, S7	Backchannelling C2, C6, C7
	Response to confirmation request S1*, S5	Response to confirmation request C4
	Confirmation S3, S6	Response to clarification request C1, C3
RESEARCHER CONDITION	Backchannelling S1, S2, S3, S4, S5, S7	Backchannelling C1, C2, C3, C4, C5, C6, C7
	Response to confirmation request S6	

***Where two dynamic moves are listed both were of equal frequency**

‡ Definitions and abbreviations for dynamic moves can be found in Appendix 12.1.3

6.2.2 Effect of TBI on the nature of information exchange: Partner responses

A description of the mean frequency of K1 moves per minute, K2 moves per minute and dynamic moves per minute by the students can be found in Table 6.6 and by the researcher in Table 6.7.

Table 6.6 Exchange structure moves by students across TBI and control groups

Subjects	K1 moves/minute	K2 moves/minute	Dynamic moves/minute
TBI (n = 7)	Mean = 1.7 Range = 0.4 - 3.0 S.D. = 1.0	Mean = 2.0 Range = 1.4 - 3.0 S.D. = 0.67	Mean = 3.3 Range = 1.8 - 4.2 S.D. = 0.9
Controls (n = 7)	Mean = 1.7 Range = 0.3 - 4.4 S.D. = 1.4	Mean = 1.7 Range = 0.8 - 3.2 S.D. = 0.9	Mean = 3.9 Range = 1.5 - 6.3 S.D. = 1.6

Table 6.7 Exchange structure moves by the researcher across TBI and control groups

Subjects	K1 moves/minute	K2 moves/minute	Dynamic moves/minute
TBI (n = 7)	Mean = 4.0 Range = 1.4 - 7.2 S.D. = 1.9	Mean = 0.9 Range = 0 - 1.8 S.D. = 0.6	Mean = 3.1 Range = 0.8 - 5.6 S.D. = 1.6
Controls (n = 7)	Mean = 5.5 Range = 2.4 - 10.2 S.D. = 3.0	Mean = 0.4 Range = 0.2 - 0.6 S.D. = 0.2	Mean = 3.7 Range = 1.6 - 5.7 S.D. = 1.5

Measures of K1 moves per minute, K2 moves per minute and dynamic moves per minute by communication partners were compared across TBI and control conditions using the Wilcoxon Signed-Ranks Matched-Pairs Test (Table 6.8).

Table 6.8 Comparison of communication partners' use of exchange structure elements with TBI and control subjects using the Wilcoxon Matched-Pairs Signed-Ranks Test

Exchange structure element	Students (with TBI) vs. Students (with Controls)		Researcher (with TBI) vs. Researcher (with Controls)	
	Observed Value	Critical Value	Observed Value	Critical Value
K1moves/minute	T = 14 (n = 7)	p = 0.53	T = 6 (n = 7)	p = 0.109
K2 moves/minute	T = 9 (n = 7)	p = 0.234	T = 5 (n = 7)	p = 0.078
Dynamic moves/ minute	T = 7 (n = 7)	p = 0.148	T = 13 (n = 7)	p = 0.469

K1 moves per minute

Students used a similar frequency of K1 moves with TBI and control subjects (T=14, p = 0.53). In fact, the mean number of K1 moves per minute produced by the students was the same across both conditions (1.7 K1 moves/minute) with similar standard deviation scores (S.D. = 1.0 for TBI condition and S.D. = 1.4 for control condition, Table 6.6, p. 269). Information giving by students was usually characterised by brief comments which supported or encouraged the TBI and control subjects' K1 moves. In the following example, the student (A)

comments on the subject of revenge for the problems that S3 (TBI subject) now has as a result of being hit by a drunk driver (Example 6.9).

Example 6.9 TBI subject S3 - Student condition
Moves 337 - 350 S = TBI subject A & B = Students

337	⌐	K1	S : I want him to die very very slowly and in pain all the time
338	└	K2f	A : (nods)
339	⌐	K1	S : It wouldn't help me walk much it'd make me feel a lot better
340	|	bch	A : Yeah
341	|	bch	B : Yeah
342	└	K1	S : you know it wouldn't make me walk any better but it'd make me feel better
343	⌐	**K1**	**A : just do a bit of damage to him**
344	└	K2f	S : yeah
345	└	**K1**	**A : with a stick**
346	⌐	**K1**	**A : Ah you know he'll get his in later life**
347	|	cfrq	S : you reckon?
348	└	**K1**	**A : when he dies**
349	⌐	K2	S : Reckon there's justice down there?
350	└	**K1**	**A : Oh in some circumstances there is but others there isn't**

In some cases, the students used their K1 moves for narrative purposes to recount funny episodes which had occurred to them. These stories were recorded in both TBI and control samples. Occasionally, students used the K1 move as

a way of restoring the topic with TBI subjects. The notion of topic repetition is addressed in Chapter 4 in the generic structure potential analysis results. The way in which exchange structure moves were used to compensate for topic repetition is demonstrated in the following example.

Example 6.10 TBI subject S3 - Student condition
Moves 407 - 429 S = TBI subject A & B = Students

407	K1	B : It's still good to see it live though
408	K2f	A : Oh yeah - watching
409	K1	B : People go through big leaps and bounds to see that
410	**K2**	**S : Do they sell Coke here cause we couldn't buy a can of Coke at university?**
411	K1	A : No I think they've always sold Coke here eh?
412	cf	B : Yeah they've always sold Coke here
413	K1	B : I don't know XX
414	K2	S : It's not only um like at the universities such as I was at aren't they sponsored by a certain drink?
415	K1	A : Yeah a lot of them are um
416	K1	A : I played this year I played for um I played rugby union for N.S.W., N.S.W. Catholic colleges
417	bch	S : Yes
418	K1	A : like on my jacket here (points to jacket)
419	bch	S : (nods)
420	K1	A : and we were sponsored by Coke
421	cf	S : You were sponsored by Coke
422	rcf	A : Yeah

423	⌜	K1	A : They sponsor a lot of people - Coke but
424	⌞	K2f	S : Yeah
425	⌜	K1	B : It's a good investment if you can get into Coca - Cola shares
426	⌞	K2f	A : Yeah
427		K2f	S : (nods)
428	⌜	K2	S : What did you say - what position did you play in?
429	⌞	K1	A : I play front row hooker
430		cf ↓	S : Front row hooker

In this excerpt, S3 made a topic shift from a discussion about the Melbourne Cup horse race which was to be run on the day of data collection, to a question regarding whether Coke was sold at the school (move 410). S3's rapid topic shift also constituted a repeated generic structural element (see Chapter 4). To smooth the transition of topic shift, student A incorporates the comment about Coke with sport sponsorship, which is loosely related to a previous discussion about the students' sporting achievements. Following on from this, student B raises the issue of Coke shares, which can be connected to a previous discussion of how S3 invested his compensation payout. Thus, both students were "normalising" the unusual contribution S3 had made by using information giving moves which provided some connection with previously discussed topics. S3 was then able to ask an appropriate question related to sport (move 428). Students'

use of K1 moves in this case provided an opportunity for the TBI subject to regain appropriate topic control by priming him towards previously discussed topics with which they were more familiar. By placing the TBI subject in a position of relative power within an interaction, the students compensated for abrupt topic changes by using linguistic resources which would not undermine that power imbalance but maintain the TBI subject's face. One of the ways they accomplished this task quite skillfully was with the use of K1 moves.

The researcher also used a similar number of K1 moves with TBI and control subjects. The nature of the information giving was primarily related to describing the purpose of the research and future plans. In control interactions, however, the researcher spent a greater proportion of the interaction discussing the research in response to K2 moves by the control subjects which requested further information. The amount of time spent on particular topics is addressed in further detail in the results of the generic structure potential analysis in Chapter 4.

K2 moves per minute

Comparisons of K2 moves per minute by the students and the researcher were made in their interactions with TBI and control subjects using the Wilcoxon

Matched-Pairs Signed-Ranks Test. This analysis examined whether the students and the researcher differed in their use of K2 moves in their interactions with TBI and control subjects. Students were required to be primarily in the K2 role, as they were requesting information from the TBI and control subjects. There were no significant differences in the frequency of K2 moves/minute by students with TBI and control subjects ($T = 9$, $p = 0.234$) or by the researcher ($T = 5$, $p = 0.078$)(Table 6.8). Students asked similar frequencies of questions to both TBI and control subjects, thus responding to the contextual configuration which required them to find out information.

In one transcript, a control subject (C2) made explicit the contextual configuration after a student invited him to ask questions of them (Example 6.11). The student appeared to use this as a strategy to continue the interaction because he had no further questions to ask. C2 asked a couple of questions (moves 292, 294 and 296), however the interaction moved to a series of K1-lead exchanges by the control subject regarding co-educational schools, farting, lunch and finally, the control subject reintroduced one of the purposes of the interaction which was to highlight awareness and prevention of spinal injuries (Move 366: K1: S: "I imagine that's what we're trying to XX the kids about wearing helmets"). This re-established the Centring element of the interaction

as discussed in Chapter 4. The students did not ask any further questions for the remainder of this interaction, but topics were developed through the use of K1-lead exchanges.

Example 6.11 Control subject C2 - Student condition
Moves 285-297 C = control subject A&B = Students

285	K2	**A : Would you like to ask us something?**
286	K2	**A : Ah you can talk to us you're allowed to ask questions, interrogation**
287	K1	**C : Ah right no well this is basically an assignment for you guys is it?**
288	chall	B : No it's for her
289	clrq	C : Oh she assesses what we do
290	rclrq	B : Yeah
291	K1	C : Says what we do and then try to make study go on for six months six months or something
292	K2	C : and what you guys are at the school here?
293	K1	B : Yeah
294	K2	C : How many pupils have you got?
295	K1	B : Oh a few five or six hundred I think
296	check	B : Is there?
297	rcheck	A : It's sort of combined cause Nazareth's up there and um we have some classes together

Despite some episodes of inappropriate or repeated information giving or inappropriate actions by TBI subjects, students continued to formulate questions. This was demonstrated clearly in the interaction between the TBI

subject, S6 and the students. S6 produced a number of inappropriate behaviours, including inappropriate joking (see Section 6.2.1) as well as interfering with the audio recording equipment and being distracted by the surrounding environment. The students reacted mostly with laughter, but persisted with K2 moves throughout the interaction. As the interaction progressed the students made some attempts to control S6's behaviour by requesting action from him to turn the audio tape back on (moves 504-507), but even after he had flouted that request (moves 514-517) they fell back on question asking as a way of attempting to keep him on track (moves 518-520)(Example 6.12).

Example 6.12 - TBI subject S6 - Student condition
Moves 504-528 S = TBI subject A&B = Students

504	A2	B : Better turn on the tape again (laughs)
505	rprq	S : mm?
506	rrprq	B : Turn it back on
507	A2	B : No the one down there
508	A1	S : (turns tape recorder back on)
509	A2f	B : yeah that's it
510	K1	B : Now it's back on
511	excl	S : Hey what's been happening buddy! (Laughs)
512	rexcl	A : He went for a sleep
513	K2f	A : yeah
514	A1	S : OK go back for a sleep

515	A1	S : (turns off tape again)
516	A2f	A : (laughs)
517	A2f	B : (laughs)
518	K2	**A : So how long have you been out here for?**
519	joke	S : Since since since the day the plane brought me in
520	K2	**A : When was that?**
521	K1	S : '81
522	cf	B : '81 (nods)
523	cf	A : '81
524	K1	S : '81 to '96 - thirteen years or something?
525	bch	A : (nods)
526	chall	B : Fifteen
527	rchall	S : Fifteen years?
528	cf	B : Fifteen years

Similarly, the researcher also asked similar proportions of questions of both TBI and control subjects. The majority of K2 moves by the researcher in both conditions were prompting whether subjects had any further questions regarding the research project.

Dynamic moves per minute

A final way of examining differences in the way students and the researcher may have interacted with TBI subjects when compared with controls, is to examine

the amount of negotiation which was needed for information exchange to take place. Comparisons of dynamic moves per minute produced by the students and the researcher were made in TBI versus control conditions. Results showed that students produced similar frequencies of dynamic moves in both TBI and control conditions, as did the researcher (Table 6.8).

Qualitative analysis was completed to establish the commonly used dynamic moves by the students and the researcher in both conditions (Table 6.9). This revealed that the most common dynamic move used by students with 7/7 controls and 6/7 TBI subjects was the backchannelling move. This is in keeping with the listening work that was required in this particular context. In two cases (S4 and S6), the challenge move was used relatively frequently by students with TBI subjects. The challenge move is considered to be interpersonally rather experientially oriented in that it focuses on the interpersonal contact of a preceding move and attacks its validity. Challenges can be used to suspend or abort exchanges (Martin, 1992). Example 6.13 illustrates a challenge.

Example 6.13 - TBI subject S6 - Student condition
Moves 424-426 S = TBI subject B = Student

424	A1 ↓	S : Rewind rewind (touches tape recorder)
425	chall	**B : No don't touch it (laughs)**
426	chall	**B : we'll get in trouble**

In Example 6.13, the student does not give permission for the TBI subject to interfere with the camera. Interestingly, this challenge is masked by laughter and a justification. This masks the attack on the validity of what the TBI subject is proposing to do. The challenge is successful as the TBI subject's response is to ask questions of the students about the researcher and their future (Example 6.14)

Example 6.14 - TBI subject S6 - Student condition
Moves 427-435 S = TBI subject B = Student

427	⌐	K2	**S : Is she your teacher?**
428	├	K1	B : No she just came here
429	└	K2f	S : (nods)
430	⌐	**K2**	**S : And what are you going to do?**
431	└	K1	A : Electrician
432	⌐	K2	S : How about you?
433	└	K1	B : Um computing
434		cf ↴	S : Computing
435		rcf ↴	B : yeah and programming and hardware

The most commonly used dynamic move by the researcher with TBI subjects was the backchannelling move (4/7 subjects) and the confirmation request (3/7 subjects). A confirmation request occurs when a listener repeats part of a speaker's move with rising intonation, or a non verbal indicator of the need for

response. It explores the experiential meaning that has already been made (Martin, 1992). The use of the confirmation request with TBI subjects was primarily to confirm an element of the preceding utterance, and to keep track of the TBI subject's information giving and requesting. Similarly, the most common was the backchannelling move by the researcher with control subjects (6/7 control subjects) and the confirmation move (1/7 controls). While backchannelling was used with both groups, the researcher was more likely to use moves which tracked and supported the control subjects' information giving, rather than needing to request confirmation or clarification of the experiential meanings being expressed which occurred with TBI subjects.

Table 6.9 Most commonly used dynamic moves by the researcher and students across TBI and Control subjects‡

WITH TBI	STUDENTS	RESEARCHER
	Backchannelling S1, S2, S3, S4, S5, S6, S7	Backchannelling S1,S3,S4,S7
		Request for confirmation S2, S5, S6
WITH CONTROLS	Backchannelling C1, C2, C3, C4, C5, C6, C7	Backchannelling C1, C2, C3, C5, C6, C7
		Confirmation C4

‡ Definitions and abbreviations for dynamic moves can be found in Appendix 12.1.3

6.2.3 Comparison of partners with each other

The question addressed in this section is whether the students and researcher differed in their information requesting and information giving. This analysis is a check of whether the contextual configuration of the research design was successful. If this were the case, it would be expected that the researcher would be in a K1 role more than the students, and conversely, that the students would be in a K2 role more than the researcher. To answer this question, the student and researcher's use of K1 moves per minute, K2 moves per minute and dynamic moves per minute were compared across TBI vs. control conditions using the Mann Whitney U Test (Table 6.10).

Table 6.10 Mann Whitney U Test comparing students with the researcher across TBI and Control conditions

Exchange structure element	Students (with TBI) vs. Researcher (with TBI)		Students (with Controls) vs. Researcher (with Controls)	
	Observed Value	Critical value	Observed Value	Critical Value
K1 moves/minute	U = 14 (n = 7)	p = 0.006 (Researcher>Students)	U = 4 (n = 7)	p = 0.006 (Researcher>Students)
K2 moves/minute	U = 9 (n = 7)	p = 0.003 (Students>Researcher)	U = 0 (n = 7)	p = 0.000 (Students>Researcher)
Dynamic moves/minute	U = 14 (n = 7)	p = 0.1	U = 24 (n = 7)	p = 0.5

K1 moves per minute

The researcher provided more information than the students to TBI (U=14, p=0.006) and control subjects (U=4, p=0.006)(Table 6.10). This supports the notion that the context was manipulated in this research so that the researcher was placed in an information giving and students in an information requesting role.

K2 moves per minute

A comparison was made between students and the researcher in the frequency of K2 moves used with TBI and control subjects. It was hypothesised that students would make more K2 moves with TBI and control subjects than with the researcher. This was confirmed with highly significant results using the Mann Whitney U Test with students being in the K2 role more often than the researcher with TBI subjects (U=9, p = 0.003) and control subjects (U=0, p=0.000)(Table 6.10). This result provides further confirmation that the students and the researcher responded to the contextual requirements of the interactions through their use of exchange structure moves.

Dynamic moves per minute

Finally, a comparison was made of the student and researcher interactions to examine whether differences existed in the use of dynamic moves per minute using the Mann Whitney U Test. No significant differences were found in either TBI interactions ($U=14$, $p=0.1$) or control interactions ($U = 24$, $p = 0.5$)(Table 6.10). This suggests that the students and the researcher used similar frequencies of dynamic moves with TBI and control subjects, indicating that interlocutors negotiated meaning with TBI and control subjects to a similar extent.

6.3 Discussion

The design of this study was based on the results of the information requesting study reported in Chapter 5. This was because of two findings. One was that people with TBI appeared to be able to interact in a similar manner to control subjects in information requesting interactions if they were in a powerful role as determined by the context (in this case, a customer in a bus timetable interaction). The second finding was that the interlocutors differed in their use of exchange structure moves with TBI subjects when compared with control interactions. These differences appeared to limit the amount of information giving the TBI subjects were able to engage in, when compared to control subjects.

This led to the question of whether manipulating the context by placing TBI subjects in a powerful information giving role would enable them to give information to the same extent as control subjects and furthermore, whether the interlocutors in this type of interaction would provide similar opportunities to the TBI subjects as control subjects. The second study also addressed the issue of partly replicating the first study by placing subjects in a requesting role (in the researcher condition) in a face to face interaction. This allowed for an appraisal of the success of the context manipulation.

6.3.1 TBI vs. control subjects' use of exchange structure

Results indicated that TBI subjects were clearly able to take on an information giving role in an interview with students to almost the same extent as controls. Such findings contrast with previous research which examines the information giving abilities of TBI subjects (Bond & Godfrey, 1997; Coelho et al., 1991). They demonstrate the powerful effects tenor may have on information giving opportunities and also the importance of taking the activity (or field) into account. By placing TBI subjects in an interview setting where they were the "expert" the activity also promoted their information giving potential. The notion of empowering TBI subjects through the discursive practices they are exposed to has not been addressed in previous research. In this research, it was

demonstrated that most TBI subjects were able to interact in similar ways to controls according to the context they were placed in. Facilitating access to positive communicative environments may be a powerful way for speech-language pathologists to foster the person with TBI into successful community integration. This will be discussed in greater detail in Chapter 9.

While the frequency of information giving was similar for TBI and control subjects, there were qualitative differences. Two strategies used by TBI subjects to give information were the use of joke telling, as well as asking questions that students did not know the answer to. The use of joke telling as a way of introducing or dealing with confronting topics, such as suicide and the details of a major trauma, showed that TBI subjects were able to access a wide range of information giving resources. While joke telling by TBI subjects tended to be more in the form of puns and word-play and control subjects were more likely to recount funny stories, the use of humour was effective in both cases.

The use of joke telling by TBI subjects has not been reported previously in the literature to this researcher's knowledge. There has been some investigation of TBI subjects' ability to appreciate humour in the form of cartoons with captions (Braun, Lussier, Baribeau & Ethier, 1989) and parents' perceptions of the person

with TBI's ability to comprehend humour (Malia, Powell & Torode, 1995; Pettersen, 1991). Sense of humour was markedly impaired in TBI subjects when compared to controls as measured by time taken to rank jokes according to funniness and classification of types of jokes. This was attributed to a narrow lexicon, poor lexical semantic processing or some type of reading dysfunction (Braun et al., 1989). While these authors commented that many of their TBI subjects had problems with interpersonal communication skills which included humour in natural and spontaneous conversation, there was no further description of these abilities. It is therefore difficult to use these findings to interpret the use of humour in the present study.

Joke telling and humour have been described as performing a number of functions in conversation such as creating or maintaining in-group solidarity, seeking approval, or achieving feelings of superiority (Giles, Bourhis, Gadfield, Davies and Favies, 1976). Other theorists have explained the occurrence of humour when there is an incongruity of some kind (Bateson, 1973). Eggins and Slade (1997) expand on this by drawing on critical discourse perspectives. These interpretations view humour as a way of expressing the social structure. Humour enacts contradictions and conflicts in the social relations between interactants. These contradictions and ambiguities are simultaneously exposed and covered up

through the use of humour.

One of the best ways to identify when an interactant is being humorous is the presence of laughter, although not all humour is identified by laughter. Other cues include phonological cues such as change of pace, volume, intonation or stress and kinaesthetic cues such as a change of facial expression or posture. There are also grammatical resources which indicate that remarks are intended to be humorous, such as amplifying or exaggerating the use of lexis (Eggins & Slade, 1997). Laughter, however, is the most commonly observed behaviour associated with humour. Studies on laughter in naturally occurring spoken interactions have shown that people often laugh at things that do not seem all that funny (Mulkay, 1988; Norrick,1993). What may appear to be funny in one context may not be in another, suggesting that the "funniness" is created contextually. It therefore involves relationships between text and the immediate (micro-) context, and the more abstract cultural or macro context (Eggins & Slade, 1997). The interactant who initiates laughter has also been examined as an important feature in determining the social relationships which are being enacted. Laughter initiated by the speaker has been described as an invitation to growing intimacy to which responsive laughter from the listener implies willingness to affiliate, whereas withheld laughter implies a declining of the

invitation (Jefferson, Sacks & Schegloff, 1987).

To explore these issues further, the types and effects of humour will be examined using the texts above. The two examples of joke telling by TBI subject S4 use word games and surprise (Examples 6.1 and 6.2), which have been reported to be the least offensive type of humour since no individual or group are denigrated (Cashion, Cody & Erickson, 1987). This subject's use of humour may have served a number of purposes. It provided some distance and disguised the serious work that the talk was achieving. It also confirmed the hierarchic relationship between the participants as the subject was "holding the floor" with an episode of information giving. This hierarchic relationship was rendered invisible however with the addition of humour. Humour was also used to express the difference between the subject and the students. The comment that "I'm not doing too bad for a brussel sprout am I?" (Example 6.1) was confirming that S4 was indeed different from the boys but this difference was softened with the use of humour. In the Roman Catholic text (Example 6.2), humour was used to essentially avoid the issue of suicide; a potentially confronting and difficult topic. Humour was therefore used as an interpersonal resource to enact the TBI subject's position in the culture of an information giving interaction, in addition to being a personal response to the interlocutors.

The telling of a joke by control subject C2 was in the form of a story (Example 6.3). C2 claims the right to tell the story which requires that the fundamental turn-taking mechanism is suspended for a brief time. This is an assertive strategy which may be construed as an act of power. This is masked however, because the story is humorous. The humour arises because of the incongruities in both the micro-context and in the social structure. From the micro-contextual perspective, C2 uses the narrative as a platform from which to dominate the talk and restrain contributions from his audience. From a macro-contextual perspective, a seriously disabled young man is a "joke" in a society where intactness and health are valued. Thus a funny story in the early stages of an interaction may be a powerful tool for C2 to establish the interactive inequality by dominating the talk and also by sending up concepts of disability and consequences of being disabled. These implications are well disguised with the use of humour.

Finally, in Example 6.4, TBI subject 6 attempts to use humour as an information giving tool. S6 opened this exchange with the statement that he wanted to tell the boys some information. The series of jokes which followed were attempts at domination of the interaction but they lacked the appropriate opening move to project the concept of an approaching joke or to have the continuity of a narrative. They also failed to address the concept of difference. There was no

underlying excuse or confronting issue which was being addressed through this type of humour. Interestingly the attempts by S6 usually produced a laughter response from the boys which may have been evidence of attempts to save face for the TBI subject and also to reinforce his information giving role.

The use of the dK1 lead exchange and joke telling were prominent as information giving strategies for TBI subject 6. S6 was the most severely impaired of all the brain injury subjects as measured on the Scales of Cognitive Ability following Traumatic Brain Injury (with a SCATBI Severity Score of 8 which classified him as moderately impaired) and also according to the ratings made by speech-language pathologists on the Pragmatic Protocol (with a total of 19 inappropriate behaviours). This moderate cognitive-communication impairment was realised by significant difficulties at the levels of discourse semantics and genre. His use of linguistic resources reflected a paucity of information giving in the student condition, as evidenced by his use of K1 moves (3.2 K1 moves per minute - the lowest of all subjects) and an increased use of the K2 move with students (1.6 K2 moves per minute - more than double the frequency of all subjects). This was realised at the generic structure level by an overuse of Approach elements and significantly reduced use of Centring elements, which is discussed in detail in Chapter 4. S6 relied heavily on the use of joking and the teaching exchange in

the student interaction, although he did not use these resources in his interaction with the researcher. This may indicate some awareness by S6 of the variation in the genre and power imbalance that was represented by these two conditions.

TBI and control subjects were also compared in their ability to request information in the researcher condition. TBI subjects asked similar proportions of questions of the researcher as the control subjects which partly accounts for the similar amounts of information giving by the researcher. The ability of TBI subjects to request information has previously been reported to be impaired when compared with matched controls (Mentis & Prutting, 1991; Schloss et al., 1985). While the frequency of requesting behaviour was similar in this study, the nature of the requests was different. To fully appreciate these differences it is necessary to refer to the generic structure potential analyses of these interactions (Chapter 4). In short, some requests made by TBI subjects to the researcher were questions that she was unable to answer (such as how they had just performed with the students even though the researcher wasn't present), repetitions of previous questions or questions related to their own recovery. These types of questions were not asked by control subjects. The nature of information requesting behaviour by TBI subjects appears to be more important than the frequency of requests.

The resources used by TBI and control subjects to negotiate the exchange of information are of interest, as TBI subjects have been previously reported to have difficulty with repairing interactions or providing feedback, with the bulk of communicative burden being placed on the interlocutor (Coelho et al., 1991). There were no differences between TBI and control subjects in the frequency of dynamic moves (which are used to negotiate meaning). There were similar patterns of use by TBI and control subjects, with a greater amount of backchannelling with the researcher and a lesser amount with the students. Backchannelling is used to monitor the dialogue, reassuring interlocutors that negotiation is proceeding smoothly. Backchannels typically occur during another speaker's turn and do not appear to be sensitive to phonological, grammatical or discourse boundaries (Martin, 1992; Sacks et al., 1974). They have also been referred to as "encouragers" (Edelsky, 1981), minimal responses (Fishman, 1978) and acknowledgment tokens (West, 1984).

Increased use of backchannelling responses in the researcher condition may have been for two reasons. Firstly, the researcher condition required subjects to request information. Back-channels are reported to be a characteristic of good listeners which encourage a speaker to continue talking. They indicate that the listener is paying attention and is in interested in hearing more (Holmes, 1995).

The researcher provided more information to both TBI and control subjects than did the students (see Table 6.10), and the increased frequency of backchannelling responses may have been due to the subjects supporting this process. Secondly, minimal responses have also been reported as being an indication of power imbalance in gender differentiation research, whereby women have been found to use more of these responses than men (Maltz & Borker, 1982). The decreased use of backchannelling in the student condition may have been a reflection of the power imbalance and possibly gender differences which existed.

6.3.2 Effect of TBI on the nature of the information exchange: Partner responses

Students asked similar frequencies of questions and gave similar amounts of information to the control subjects as they did to the TBI subjects. Students were noted to give similar types of information to TBI and control subjects, including recounting funny stories and giving supportive or encouraging comments. Information giving was also used as a resource by students to redirect TBI subjects during periods of abrupt topic change, without posing a threat to face. In these cases, K1 moves made by students appeared to smooth over the transition and to facilitate the TBI to refocus on the topic at hand.

There is a paucity of information regarding the communication behaviour of the partners of people with TBI and the effects that they have on TBI discourse. The present research indicates that these behaviours directly influence the linguistic choices available to people with TBI. In the student condition, the tenor and field made a similar range of linguistic choices available to the TBI subjects as the control subjects. By placing the person with TBI in this particular context, they were able to function in the K1 role to a similar extent to controls, engage in joke telling and request similar amounts of information. The communication behaviour of the partner is determined by the role that partner is playing in the larger picture of the register, genre and ideological characteristics of the interaction. These characteristics have not been directly evaluated in previous research examining communication following TBI.

Similarly, the researcher condition demonstrated that a deliberate manipulation of tenor and field can produce differences in the roles available to TBI and control subjects. The researcher gave more information than students to both TBI and controls and similarly, the students asked more questions than the researcher of both groups of subjects. This reflected the preset purpose of each interaction, where the students were to request information from the subjects and the subjects were to request information from the researcher.

Information giving is related partly to the frequency of information requests by the communication partner. The researcher gave similar amounts of information to TBI and control subjects which may be because TBI subjects asked similar proportions of requests as the controls. Previous research has focused more attention on the quantitative characteristics of conversational behaviours of people with TBI without an appraisal of the qualitative features (e.g., Ehrlich & Sipes, 1985). A combination of both approaches is crucial to appreciate the complex difficulties people with TBI experience in their interactions. It is also important to examine behaviours across different stratal levels of language as an isolated examination of exchange structure does not provide a complete picture of the complexity of language resources used by interlocutors.

6.3.3 Comparison of partners with each other

The findings of the comparison of students with the researcher confirmed that the manipulation of the contextual configuration to place interlocutors in particular roles was successful. Previous research into TBI interactions has not varied the speaker role of the interlocutor and therefore has not examined the effects of such variation. Relationships between interlocutors can vary according to a number of factors including who is in relative power, the purpose of the communicative situation, the genre and the goals of the participants. All these

factors influence the language choices which are made available to both participants in an interaction. This research demonstrated that the variation of the speaker role (information giver vs. information requester) was realised through the exchange structure choices made by interactants.

It has been previously emphasised that people with TBI should be evaluated with a number of interlocutors as part of a thorough communication needs assessment (Hartley, 1995). Merely varying the interlocutor is not sufficient, however, as the goal of the interaction and the primary roles participants are assuming will be directly realised through the language which is used. Exchange structure analysis is a useful way to delineate these language choices, as it is interpreted in light of the genre of the interaction and the tenor and communicative purpose of the participants.

6.4 Summary

6.4.1 List of findings

TBI vs. CONTROLS **K1 moves/minute**	Controls>TBI with students No difference with researcher Joke telling: concrete/puns by TBI; story/narrative by Controls Controls in K1 role: Students>Researcher TBI in K1 role in 5/7 Students>Researcher
K2 moves/minute	No difference b/n TBI vs. Controls TBI: Researcher>Students Controls: No difference b/n Researcher and Students
Dynamic moves/minute	No difference with TBI vs. Controls TBI & Controls: Researcher>Students
PARTNER RESPONSES **K1 moves/minute**	Students & Researcher: Same for TBI & Controls
K2 moves/minute	Students & Researcher: Same for TBI & Controls
Dynamic moves/minute	Students & Researcher: Same re frequency but different in nature b/n TBI and Controls
COMPARISON OF PARTNERS WITH EACH OTHER (Researcher vs. Students) **K1 moves/minute**	Researcher>Students with TBI and Controls
K2 moves/minute	Students>Researcher with TBI and Controls
Dynamic moves/minute	No significant differences between students and researcher

6.4.2 Conclusions

This chapter set out to investigate whether the genre and speaker roles in interactions could be manipulated so that TBI subjects were afforded similar language choices to control subjects. Critical discourse theory asserts that discourse contributes to the construction of "social identity", social relationships between people and their systems of knowledge and beliefs (Fairclough, 1992). People with TBI have a number of social identities including son, patient, customer and in the case of the results reported in this chapter, as an expert on the experience of having a TBI. By placing them in an expert role, they were able to interact in a similar manner with students as control subjects. They also demonstrated that they were able to switch from being an information giver to an information requester. These observations have not been previously made regarding TBI subjects. While it is suggested that they should be exposed to different communicative situations, these have not been previously examined.

The results of this chapter indicate that the ability of TBI subjects to adapt to different situations may be underestimated, and furthermore, that TBI subjects may be able to assume social identities to the same extent as matched controls if they are placed into powerful information giving roles.

This raises the question of whether communication partners such as mothers, therapists and others in the community could be trained in ways of communicating with people with TBI so that their discursive practices fostered this process. These issues will be discussed further in Chapter 9.

Chapter 7
Use of politeness markers in TBI and control information requesting interactions

7 Politeness and TBI discourse

Communication impairments following TBI have been described as a problem with the interactional nature of conversation (Hartley, 1995). Interactional problems have been investigated using pragmatic profiles (e.g., turn taking)(Milton et al., 1984), social skills perspectives (e.g., asking questions) (Flanagan et al., 1995) and examination of the propositional content of interactions (Coelho et al., 1991; McDonald, 1993; Mentis & Prutting, 1991). It has been suggested that people with TBI may have problems with the conventions of social interaction as described by Grice's (1975) rules of cooperation and politeness (Table 7.1). Using this framework McDonald (1993) and Snow et al. (1995) found that the majority of errors for TBI subjects fell within the categories of Quantity and Manner. These studies have described TBI subjects' difficulty with the propositional content of language; however, the expression of *politeness* within interactions remains to be explored. A notable exception to this was McDonald (1992) who asked two TBI subjects and two matched controls to formulate polite requests (such as asking a stranger the time). Both subjects were able to complete these tasks with adaptive and effective responses. When the demands of the task were increased by insisting that

requests were made in the form of hints, the TBI subjects were unable to comply. It was concluded that frontal lobe impairment, particularly loss of abstraction ability and disinhibition disrupted the ability to communicate non-conventional indirect meaning.

Table 7.1 Grice's (1975) Cooperative Principle

Quantity	Make your contribution as informative as is required Do not make your contribution more informative than required
Quality	Do not say what you believe to be false Do not say that for which you lack evidence
Relation	Be relevant
Manner	Avoid obscurity of expression Avoid ambiguity Be brief Be orderly

Politeness has been described from a number of perspectives. Lakoff (1974) observed that sociocultural goals, broadly called politeness, led people to express opinions and preferences in widely varying linguistic forms. Early proponents of sociolinguistic approaches to language, such as Austin (1962) and Searle (1975) described a dissociation between the illocutionary force and the propositional content of an utterance. They cited indirect speech acts as examples of this separation. Brown and Levinson (1978, 1987) argued that the form taken by

utterances during interactions can be seen as the linguistic means of satisfying the coexisting and often conflicting needs for negative face (the need to be let alone) and positive face (the need to be approved by others). As a result, people often prefer to express their opinions off the record - that is, indirectly. The underlying social need to establish and maintain face depends on aspects of the context such as social distance and power. Other approaches dissociate particular features of language as being politeness markers (Stubbs, 1983). Some of these markers include negative polarity, the use of the modal form of the verb and indirect forms.

Varying degrees of subtlety in expressing politeness might therefore be problematic for TBI subjects. However analyses tend to treat politeness as an issue somehow separate from other aspects of language and there is a need for a more linguistically integrated and sophisticated way of analysing politeness in discourse. Systemic functional linguistics views politeness as forming part of the interpersonal metafunction. This chapter examines the interpersonal construct of politeness from the SFL perspective.

7.1 Methodology

The measure used was the total number of politeness markers divided by the total number of clauses to give the frequency of politeness markers per clause for each interaction. Thirty-eight transcripts (i.e., five TBI subjects in four information requesting interactions - bus timetable information, police, mother and therapist, five control interactions with bus timetable information and therapists, and four control interactions with police and mothers) were scored according to the politeness markers shown in Table 7.2 and discussed in Chapter 2. The methodology for data collection has been described in detail in Chapter 2 and the analysis is described in detail in Appendix 12.1.4.

Table 7.2 Politeness markers from the Systemic Functional Linguistic framework (Halliday, 1985)

Politeness marker	Examples
* finite modal verbs	will, would, could, should, might, must
* modal adjuncts	probably, possibly, just
* comment adjuncts	I think, unfortunately
* yes/no tags	He's gone overseas, hasn't he?
* incongruent realisations of the interrogative form	You don't know what time they go or anything?

TBI and control samples were compared across the four telephone conditions. Communication partners were compared with each other across TBI vs. control subjects and within interactions.

7.2 Politeness marker use in information requesting interactions

7.2.1 TBI and control subjects' use of politeness markers

Differences in politeness markers per clause by TBI and control subjects (Table 7.3) were compared in each of the four conditions using the nonparametric Wilcoxon Matched-Pairs Signed-Ranks Test. Nonparametric tests were used because of the small sample size and because they make no assumptions about normality and homogeneity of the variance of the population sample.

Table 7.3 Politeness markers per clause for TBI and control groups by Condition

Subjects	Therapist	Bus	Police	Mother
TBI subjects	n = 5 Mean = 0.45 Range = 0.34-0.68 S.D. = 0.13	n =5 Mean = 0.42 Range = 0.25 - 0.5 S.D. = 0.10	n = 5 Mean = 0.43 Range = 0.2 - 0.73 S.D. = 0.25	n = 5 Mean = 0.49 Range = 0.17-0.88 S.D. = 0.29
Control subjects	n = 5 Mean = 0.68 Range = 0.5 - 0.97 S.D. = 0.18	n = 5 Mean = 1.01 Range = 0.7 - 1.67 S.D. = 0.42	n = 4 Mean = 1.03 Range = 0.8 - 1.2 S.D. = 0.17	n = 4 Mean = 0.65 Range = 0.54 - 0.8 S.D. = 0.11

Control subjects used significantly more politeness markers per clause than the TBI subjects in the therapist ($T = 0$, $p < 0.05$), bus ($T = 0$, $p < 0.05$) and police conditions ($T = 0$, $p < 0.05$)(Table 7.4). Control subjects also used more politeness markers per clause with their mothers than TBI subjects although this

only approached significance (T = 0, p=0.06). To investigate whether there was a difference in the frequency of politeness marker use by control subjects across communication partners, a Friedman Test was employed with a 0.05 level of significance. This indicated that there were significant differences in the way controls used politeness markers with different communication partners (χ^2_r = 9.9, df = 4, p < 0.02). To identify these differences post-hoc Wilcoxon Matched-Pairs Signed-Ranks Tests were employed. Using a significance level of 0.05, control subjects used more politeness markers with the police and the bus timetable information service, than with therapists or their mothers (Table 7.5). However, with Bonferroni adjustment the level of significance was reduced to 0.0083. These results must be viewed as preliminary data and while significance may not have been reached, the trends suggested by the data are important. The most commonly used politeness marker was the modal verb, (such as *should, would*) which was followed by the modal adjunct (such as *just, probably, possibly*). The use of declaratives plus rising intonation to make requests was also prominent.

The TBI subjects' use of politeness markers was evaluated for variation across communication partners. The Friedman Test revealed that they did not differ in the amount of politeness markers produced across the four conditions (χ^2_r =

0.6, df = 4). This lack of variability is the result of an overall fewer number of politeness markers, and the use of statements characterised by positive and negative polarity as well as congruently expressed requests.

Table 7.4 Use of politeness markers per clause

TBI vs. Controls (Wilcoxon Matched-Pairs Signed-Ranks Test)	Controls vs. Communication Partner (Mann Whitney U Test)	TBI vs. Communication Partner (Mann Whitney U Test)
1. T = 0 ‖(n=5)* (Controls>TBI)	1. U = 13	1. U = 13
2. T = 0 ‖(n=5)(Controls>TBI)	2. U = 3 ‖(Controls>Bus)	2. U = 16
3. T = 0 ‖(n=5)(Controls>TBI)	3. U = 0 †(Controls>Police)	3. U = 2 ‖(TBI <Police)
4. T = 0 ‡(n=4)(Controls>TBI)	4. U = 9	4. U = 8

1. Therapist
2. Bus
3. Police
4. Mother

§Significant at p≤ 0.001
† Significant at p≤ 0.01
‖≤ Significant at p≤ 0.05
‡ Approaching significance
* n varied according to tied ranks and two control transcripts were not available: mother and police

Table 7.5 Post hoc Wilcoxon Matched-Pairs Signed-Ranks Test with control subjects across communication partners

Comparison	Test statistic	Direction of difference
Control (& B) vs Control (& M)	T = 2 (n=4)*	
Control (& B) vs Control (& T)	T = 0 ‖ (n=5)	B > T
Control (& B) vs Control (& P)	T = 3 (n=4)	
Control (& M) vs Control (& T)	T = 3 (n=4)	
Control (& M) vs Control (& P)	T = 0 ‡ (n=4)	P > M
Control (& T) vs Control (& P)	T = 0 ‡ (n=4)	P > T

‖Significant at p≤ 0.05 ‡ Approaching significance * n varied according to tied ranks and two control transcripts were not available: mother and police

To illustrate the differences in the way interactions unfolded, the following two transcripts provide examples of the way a TBI subject and his brother opened their telephone enquiry to the same police officer (Examples 7.1. - 7.2).

Example 7.1 Control subject C5 - Police condition
Moves 1 - 12 P = Policeman C = control Subject

1	P : Good afternoon Flemington Police can I help you?
2	C : Um My name's **B.B**
3	P : Yes
4	C : And I was **just gonna** ring up about me brother
5	C : because he's had a car accident
6	C : and um he's got slight brain damage?
7	P : Oh right
8	C : **I was just gonna wonder how we'd go** gettin' his license back
9	C : OK

10 C : After he's **sort of** recovered
11 P : No problem
12 P : I'll **just** explain this test for you here

Example 7.2 TBI subject S5 - Police condition
Moves 1 - 25 P = Policeman S = TBI subject

1 P : Flemington Police
2 S : Hello **T.? (policeman's first name)**
3 P : Yes
4 S : **I was told to ring ya**
5 P : Well what's your name?
6 S : **J.**
7 P : **J.** How are you **J?**
8 S : Not bad how are you goin' **T.?**
9 P : Not too bad
10 P : I'm **just** ah doin' a bit of police work at the moment
11 S : Are ya doin' any good?
12 P : Oh yeah all the time [trying to do something
13 S : [Oh well there you go
14 P : (laughs)
15 P : Too many motor vehicle accidents and too many **bloody**
16 S : [yeah
17 P : [little things like that **you know**
18 S : [Yeah I understand

24 S : Um what's the go
25 S : Am I in trouble?

These examples show how differently these brothers approached the task of requesting information from the police. They both had a name to contact in the police service, however they opened the call quite differently. The use of vocatives (names) is another indicator of politeness. Note here that the control subject introduces himself, but uses no vocatives with the police officer. The TBI subject calls the police officer by name, which precipitates the police officer to enquire after the subject's name, eliciting his first name. He then uses the first name throughout the call. Even though the TBI subject may have started inappropriately, his behaviour is reinforced as the police officer uses linguistic resources which seem to be an attempt to reduce the status difference. These include the modal adjunct *"just"* and an expletive *"bloody"*. Notice that the TBI subject does not make his enquiry clear from the outset, and indeed when he does make an enquiry it is devoid of politeness markers:

24. S : Um what's the go

25. S : Am I in trouble?

While the police officer used significantly more politeness markers than S5, he still maintained control over the interaction. For example there were two occasions where S5 interrupted the police officer (which is usually the privilege of the dominant speaker):

Example 7.3 TBI subject S5 - Police condition
Moves 56-99 P = Policeman S = TBI subject

56	P : Yeah well you go to the RTA office and [you
57	**S : [need your green slip, how do I go about that?**
58	P : you **just** take your motor bike
59	S : Yeah
60	P : to the RTA office
61	P : and um and get it registered down there
62	P : **just** take it down there
63	S : Oh good
64	P : And they'll [ah
65	S : **[It's in good nick it still is now**
66	**P : What kind of bike is it?**
67	S : Um it's a 250
68	**P : Is it?**
69	S : RZ[250 R
70	**P : [It It goes alright?**
71	S : It goes good
72	S : It's fun
73	P : Oh that's good [Yeah
74	S : **[Yeah handles good too**
75	P : All you **gotta** do is see one of the RTA officers down there,
76	P : and tell them that you want to get your motor vehicle registered
77	S : Yeah
75	P : And um or your motor bike
79	S : Yeah

80 P : And they'll do it for you
81 P : **But the main thing is J. is that it's just gotta go through the Commonwealth Rehab**
82 S : Commonwealth Rehab
83 P : Yeah,
84 P : and ah you know they are, they [provide
85 **S :** **[I've got a lot of Aboriginal mates**
86 P : Yeah
87 S : In the service
88 P : Yeah, oh yeah
89 S : Ah, they're older men
90 P : **Yeah and just go to Cumberland College for the test**
91 **P : and [then you're right**
92 S : [Cumberland College
93 P : Yep,
94 P : and then you're right
95 P : you **will** get a driver's license
96 P : It **should** be no problem
97 S : Yeah
98 P : As long as you pass the test
99 S : Yeah

Initially the police officer answers S5's side enquiry (Moves 58-64). However a repeated interruption about S5's motor bike (Move 65) brings the policeman to the use of bald Wh -interrogative and yes-no questions to gain some control over the interaction ("What kind of bike is it? It goes alright? Is it?"). He returns to

his explanation, and uses the linguistic resources of the vocative ("But the main thing is *J.*") the modal adjunct "*just*" and the early modal "*gotta*". Once again, however he is interrupted by S5 with "I've got a lot of Aboriginal mates" (Move 85). The policeman does not get drawn into this topic at all, but re-establishes control by returning to his original explanation. This is modalised with the use of modal adjuncts, modal verbs ("*will*", "*should*"), and brings the phone call to a close.

The control subject's enquiry is characterised by an incongruent request for information. It is a statement of action, but is also giving information "*I was just gonna ring up about me brother..*". The modal adjunct "*just*" and early modal "*gonna*" soften the pre-enquiry information-giving utterance. This is then followed by the request for information which is *"I was just gonna wonder how we'd go gettin' his license back.. After he's sort of recovered*". This request is characterised by a number of the resources from the mood and modality systems including the modal adjunct "*just*", an early modal "*gonna*", the modal verb "*would*" and the use of a declarative with rising intonation. The control subject is therefore using a number of resources to modalise his request, which may be in response to the unequal power relationship he is involved in. This particular subject was extremely nervous prior to the call, and wanted to know the rank of the officer

he was speaking to before he made the call. The choices he made linguistically reflect the effort he put into ensuring his request was politely formed.

TBI and control subjects used the fewest politeness markers/clause in the mother condition. As this was the most familiar communication partner with the closest social distance, this result was expected.

7.2.2 Communication partners' use of politeness markers when compared with each other (i.e., across interactions)

Roles and status differences were expected to be reflected also in the use of interpersonal resources by the communication partners. The interlocutors who interacted with TBI and control subjects were compared with each other in their use of politeness markers per clause (Table 7.6)

Table 7.6 Politeness markers per clause for partners by speaker group

	Therapist	Bus	Police	Mother
With TBI	n = 5 Mean = 0.47 Range = 0.23 - 0.68 S.D. = 0.19	n =5 Mean = 0.55 Range = 0.23 - 0.96 S.D. = 0.30	n = 5 Mean = 0.79 Range = 0.65- 0.94 S.D. = 0.13	n = 5 Mean = 0.62 Range = 0.23-0.68 S.D. = 0.19
With Controls	n = 5 Mean = 0.64 Range = 0.45 - 0.79 S.D. = 0.16	n = 5 Mean = 0.68 Range = 0.4 - 1.0 S.D. = 0.21	n = 4 Mean = 0.70 Range = 0.49 -0.82 S.D. = 0.14	n = 4 Mean = 0.64 Range = 0.38 - 1.0 S.D. = 0.26

To compare communication partners with each other during interactions with TBI subjects a Kruskall-Wallis One-Way Analysis of Variance (for small samples) was employed which found that differences did exist ($H = 8.96$, $df = 3$, $p<0.05$). The nature of these differences was investigated using post-hoc Mann Whitney U Tests at a Bonferroni adjusted 0.0083 level of significance. The only difference identified was that police used significantly more politeness markers than therapists during TBI interactions ($U = 1$, $p = 0.008$, Table 7.7). Therapists used the fewest politeness markers with TBI subjects (with a Mean = 0.47 politeness markers/clause, Table 7.6). While the Kruskall-Wallis Test suggested that differences existed in communication partners' use of politeness markers ($H = 8.97$, $df = 3$, $p < 0.05$) these were not found in post-hoc testing (Table 7.5).

Table 7.7. Comparison of communication partners within TBI and control interactions using the Mann Whitney U Test

Comparison	Test Statistic	Direction of difference
B (& TBI) vs. M (& TBI)	U = 11	
B (& TBI) vs.T (& TBI)	U = 11	
B (& TBI) vs. P (& TBI)	U = 8	
M (& TBI) vs. T (& TBI)	U = 6	
M (& TBI) vs. P (& TBI)	U = 5	
T (& TBI) vs. P (& TBI)	U = 1 §	P > T
B (& Controls) vs. M (& Controls)	U = 7	
B (& Controls) vs. T (& Controls)	U = 11	
B (& Controls) vs. P (& Controls)	U = 7	
M (& Controls) vs. T (& Controls)	U = 8	
M (& Controls) vs. P (& Controls)	U = 9	
T (& Controls) vs. P (& Controls)	U = 6	

§ p = 0.008

7.2.3 Communication partners' use of politeness markers when compared with TBI and control subjects (i.e.,within interactions)

Communication is an interaction and the existence of unexpected resources by one speaker affects the communication behaviour of the interactant. This research therefore looked at whether the communication partners' use of politeness markers was significantly different from TBI subjects and controls using the Mann Whitney U Test with a 0.05 level of significance (Table 7.4).

The key finding here was that police used significantly more politeness markers when communicating with TBI subjects ($U = 2$, $p \leq 0.05$), but in contrast, police used less politeness markers than the controls ($U = 0$, $p \leq 0.01$). Police used finite modal verbs, modal adjuncts and comment adjuncts during their information exchanges with TBI subjects. Finally the bus timetable information service used significantly less politeness markers than the control subjects ($U = 3$, $p \leq 0.05$).

7.3 Discussion

This chapter examined the way individuals with TBI and matched controls approached the task of requesting information from a range of interlocutors who varied according to power, status and contact. The frequency of politeness markers per clause were considered to be an index of the subjects' variation of linguistic resources according to variation of tenor.

Findings indicated that TBI subjects used less politeness markers than matched controls when interacting with therapists, the bus timetable information service and most notably the police. This may be interpreted in two ways. Firstly, it could be suggested that TBI subjects were insensitive to the contextual features of familiarity and social distance and therefore failed to vary their use of

politeness markers across contexts. However, other analyses performed on these data (exchange structure analysis and generic structure potential analysis) suggest that on other levels, TBI subjects did vary their language use. This may indicate that mood and modality analysis is more sensitive to the paucity of interpersonal resources at the clause level. These results are commensurate with the common observation that people with TBI express literal concepts, and have difficulty with the expression and comprehension of the abstract or complex (McDonald, 1992).

Secondly, the preponderance of frontal and prefrontal lobe pathology following TBI and its impact on language functioning may also provide some explanation (Alexander, Benson & Stuss, 1989). All five TBI subjects showed some degree of frontal lobe damage with concomitant diffuse lesions, which may account for their inability to vary language resources with different communication partners. Impairments of performance monitoring, poor planning and impairments of social cognition and judgment may well have restricted the person with TBI's ability to use politeness markers appropriately.

By using a higher frequency of politeness markers per clause with the police and bus timetable information service, control subjects were expressing awareness of

power imbalance and also of the genre of the call. Police and bus timetable information interactions were service encounters, which involved the subjects enquiring about information from a stranger in a customer-vendor relationship. The use of appropriate requesting behaviour within this genre requires the use of politeness markers. In Chapter 3, which examined the generic structure potential (GSP) of these same interactions, it was shown that the control subjects did not engage in inappropriate or incomplete requesting behaviour; whereas, TBI subjects produced inappropriate and incomplete requests requiring repetition 30% of the time in the bus timetable condition and 9% of the time in the police condition. Such a failure at the Service Request level of the GSP was in part due to a lack of politeness markers. This demonstrates that the use of politeness markers is explicitly linked to the genre (service encounter, casual conversation) and the tenor (participants).

Whether communication partners differed from each other in their use of politeness markers was also examined. The interesting finding here was that therapists produced the fewest politeness markers with TBI subjects when compared to other communication partners. This result was surprising as it was expected that the therapist would be attempting to save face for the TBI subject.

The answer to this may be found from another level of analysis. Exchange structure analysis completed on this data suggested that therapists were more likely to give and request information of control subjects when compared with the TBI subjects (see Chapter 5). Therapists rarely asked TBI subjects questions that they did not know the answer to. As the use of politeness markers was frequently associated with asking questions the reduced number of politeness markers by therapists may be explained by this reduced number of questions.

Therapists may also have spoken bluntly to TBI subjects as a way of controlling the interaction. By asking few questions and giving the information that was requested therapists provided few opportunities for the TBI subjects to engage in an information giving interaction. This was supported by exchange structure analysis which revealed that TBI subjects rarely gave information to therapists (Chapter 5). By being unable to assume an information giving role the TBI subjects were limited to a question asking role and were therefore unlikely to speak at length or go off the topic; characteristics that were noted on their Pragmatic Protocol ratings (Chapter 2).

Control subjects used significantly more politeness markers than the police in their interactions. Controls' use of politeness markers may have been a way of

maintaining the police officer's face by preserving his authority and dominance in the interaction. Ulichny and Watson-Gegeo (1989) described an interaction between school children and a teacher where students used politeness indicators even when the teacher was in error, indicating they were the one who made a mistake. In contrast, police used significantly more politeness markers with the TBI subjects than they did with the controls. This may have been to save face for the TBI subject. Police would have detected from the very beginning of the call that they were speaking to someone who was breaking some of the rules of telephone enquiries. The opening sequence of a telephone enquiry has a clear structure which was generally adhered to in the control interactions. Problems with the opening sequence and the use of personal address in TBI interactions may have led the police to defer to the TBI subjects while still controlling the interaction. Politeness markers may have been used to mask this process. Such masking was not necessary in control interactions as control subjects made modalised enquiries and allowed the police officer to give their reply.

Poynton (1985) describes the rights or privileges of those in power in an interaction. Some of these include the right to use name forms, and to use expletives or slang. Those in power are also described as being more likely to use familiar vocatives, to use high modalisation forms and to use congruent forms.

Those in deference are described as being more likely to use respectful vocatives, to use low modalisation forms and to use interpersonal metaphor. The TBI subjects did not use these linguistic resources and therefore the police changed the way they communicated. However while using these politeness forms, the police still had ultimate control over the interactions, and in some cases they appeared to "overplay" the politeness possibly to the detriment of the person with the TBI.

7.4 Summary

7.4.1 List of findings - Use of Politeness Markers

Investigation	Finding
TBI vs. Controls	Controls > TBI with therapist, bus and police, and approaching significance for mothers Controls: More politeness markers per clause with police and bus than therapists and mothers TBI : no difference across conditions in frequency of politeness markers per clause Commonly used politeness markers by both groups: modal verb, modal adjunct and declarative+rising intonation
Comparison of Communication Partners with each other	Police>Therapists with TBI Therapists: Fewest with TBI subjects compared to other communication partners
TBI & Controls vs. Communication Partners	Police > TBI Police < Controls Bus < Controls

7.4.2 Conclusions

This chapter addressed part of the third research question raised in Chapter 1, namely whether people with TBI and those without differed in their use of politeness markers in information requesting exchanges. The difference in communication partners' use of politeness markers was also of central concern when comparing TBI and control interactions. Results indicated that TBI subjects did not use politeness markers to the same extent as control subjects and that communication partners used different lexicogrammatical resources with TBI subjects than they did with control subjects. Control subjects and interlocutors were noted to vary their use of politeness markers according to who they were speaking to. These results support the notion that language use will vary at all stratal levels according to a variation in tenor. The analysis of politeness markers was sensitive to differences between TBI and control interactions and the effects of different interlocutors. In particular, the relative power of interactants appeared to determine the use of politeness markers rather than the complexity of the information being requested.

The following chapter examines the use of politeness markers in information giving and requesting interactions. This will answer the final part of the third research question which asks whether TBI and control interactions can be

differentiated using the analysis of politeness markers when the TBI and control subjects are in an information giving role as well as an information requesting role.

Chapter 8

Use of politeness markers in TBI and control information giving and requesting interactions

8 Politeness markers in information requesting interactions

In Chapter 7, TBI subjects were found to produce fewer politeness markers (see Table 7.2) than matched control subjects during four information requesting interactions. A comparison across the four conditions also revealed that TBI subjects did not vary their use of politeness across conditions, whereas control subjects used more politeness markers with the police and bus timetable information service than with their mothers or therapists. It was suggested that this variation by control subjects was 1) because control subjects were expressing awareness of the power imbalance which existed in the police condition and 2) as a result of the service encounter genre which both of these conditions represented, which required a higher frequency of politeness markers to be used to appropriately request information.

When requesting information, an interlocutor is in a less powerful position than the person who is giving that information (Poynton, 1985). Speaker role determines the linguistic options which are available, including the right to take

the floor and provide information (Edelsky, 1981). By placing the person with TBI in an information giving role it was expected that they would be given similar opportunities to take the floor as well as ask questions as control subjects, and therefore use similar proportions of politeness markers in the process. To further investigate the use of politeness markers by TBI and control subjects, this chapter focuses on two different types of interaction. The first interaction required TBI and control subjects to give information to school students. As school students were requesting information, it was expected that they would use a higher proportion of politeness markers per clause than the TBI and control subjects. In the second interaction, TBI and control subjects were required to ask questions of the researcher in a brief session which wrapped up the data collection. This condition was included to test the assumption that a manipulation of genre and speaker role (from information giver to information requester) would be reflected at the level of the lexicogrammar. It has already been demonstrated that this manipulation was successful at the discourse semantics level, as evidenced by the TBI and control subjects' use of exchange structure elements (Chapter 6). For example, control subjects and to a lesser extent, TBI subjects assumed the K1 role (information giver) with the students more often than with the researcher and similarly, they assumed the K2 role (information requester) more often with the researcher than they did with the students (see Chapter 6 for further details).

8.1 Methodology

To investigate the use of politeness markers by TBI and control subjects and their communication partners, the measure used was the total number of politeness markers divided by the total number of major clauses to give the frequency of politeness markers per clause for each interaction. Twenty-eight transcripts (seven TBI subjects and seven matched controls across two speaking conditions - student and researcher) were scored according to the politeness markers described in Chapters 2 and 7. The methodology for data collection was described in detail in Chapter 2 and the analysis is described in further detail in Appendix 12.1.4.

8.2 Use of politeness markers in information giving and information requesting interactions

To examine the use of politeness markers, three different comparisons were made. The first area of interest is the comparison of TBI and control subjects (Section 8.2.1). Secondly, TBI and control subjects are compared with their interlocutors within interactions (Section 8.2.2). The third comparison examines whether interlocutors vary their use of politeness markers when speaking to TBI subjects compared to controls (Section 8.2.3).

8.2.1 TBI vs. control subjects

A description of the mean frequency of politeness markers per clause, the range and the standard deviation of scores for TBI and control groups can be found in Table 8.1.

Table 8.1 Politeness markers per clause for TBI and control groups by condition

Subjects	Student	Researcher
TBI (n = 7)	Mean = 0.84 Range = 0.5 - 1.1 S.D. = 0.22	Mean = 1.23 Range = 0.7 - 1.5 S.D. = 0.23
Controls (n=7)	Mean = 1.0 Range = 0.7 - 1.7 S.D. = 0.34	Mean = 1.49 Range = 0.9 - 2.8 S.D. = 0.62

Three comparisons were made of the use of politeness markers per clause by TBI and control subjects across two conditions - student and researcher using the nonparametric Wilcoxon Matched-Pairs Signed-Ranks Test and the Mann Whitney U Test. Nonparametric tests were used because of small sample sizes and because they make no assumptions about normality and homogeneity of the variance of the population sample. The first comparison was of TBI versus control subjects' use of politeness markers; the second was of TBI subjects with their communication partner (the students and the researcher) and the third was of the control subjects with the communication partner (Table 8.2).

Table 8.2 Use of politeness markers per clause

TBI vs. Controls (Wilcoxon Matched-Pairs Signed-Ranks Test)	TBI vs. Communication Partner (Mann Whitney U Test)	Controls vs. Communication Partner (Mann Whitney U Test)
1. T = 7(n=7)	1. U = 6 †(Students>TBI)	1. U = 19
2. T = 9 (n=7)	2. U = 17	2. U = 24

1. Student condition
2. Researcher condition
† Significant at $p \leq 0.01$

TBI and control subjects did not differ in the frequency of politeness markers per clause used in both student and researcher conditions (Table 8.2). The three most commonly occurring politeness markers were examined to assess whether TBI and control subjects differed in the type of politeness markers used (Table 8.3).

Table 8.3 Three most commonly used politeness markers by TBI and control subjects across speaking conditions

STUDENT CONDITION	TBI	CONTROLS
	Modal verb 1. S7 2. S1,S2, S3, S4, S5 3. S6	Modal verb 1. - ¶ 2. C1, C2, C3, C4, C5, C6, C7 3. -
	Modal adjunct 1. S1, S2, S3, S4, S5 2. S7 3. -	Modal adjunct 1. C1, C2, C3, C4, C5, C6, C7 2. - 3. -
	Yes/No tag 1. - 2. S6 3. S3	Yes/No tag 1. - 2. - 3. C5
	Comment adjunct 1. - 2. - 3. S5	Comment adjunct 1. - 2. - 3. C1, C2, C3, C6, C7
	Wh-question 1. - 2. - 3. S5	Vocative (i.e. names) 1. - 2. - 3. C4
RESEARCHER CONDITION	Modal verb 1. S2, S7 2. S1, S3, S4, S5, S6 3. -	Modal verb 1. - 2. C1, C2, C3, C4, C5, C6, C7 3. -
	Modal adjunct 1. S1, S2, S3, S4, S5, S6 2. S7 3. -	Modal adjunct 1. C1, C2, C3, C4, C5, C6, C7 2. - 3. -
	Yes/No tag 1. - 2. - 3. S3	Yes/No tag 1. - 2. - 3. C3
	Vocative 1. - 2. - 3. S1	Comment adjunct 1. - 2. - 3. C1, C2, C5, C6, C7

Wh question	Yes/No
1. -	1. -
2. S2	2. -
3. S4, S5, S6, S7	3. C4

¶ This indicates that no subject in that group used this politeness marker as their most common, second most common or third most common choice

This analysis showed that TBI and control subjects showed similar patterns of politeness marker use with the most common being the modal adjunct. This was realised by words such as "just", "probably", "possibly" with the most common being "you know". In the following example, "you know" is used three times by the control subject in an information giving exchange which assists the students with a block in their question asking. Additionally, the control subject uses the modal adjunct "basically" and the modal verb "would" in move 205. The use of "you know" appears to be a face saving device for the students, as well providing a hedge to reduce power and status differences (Example 8.1)

Example 8.1 Control subject C6 - Student condition
Moves 200-206 A&B = Students C= control subject 6

200	B : Um I had a really good question
201	C : (laughs)
202	B : and I've forgotten it
203	B : I'm gonna kick myself
204	B : Um (..)
205	C : **Basically** anything you want to know guys **you know** feel free **you know** whether it becomes **you know** personal - anything you'**d** like to know

The second most common politeness marker was the modal verb (e.g., will, might, must). Other politeness markers which were commonly used included the Yes/No tag question, the Wh-question form and the comment adjunct (e.g., "I think", "unfortunately", "to be honest"). Control subjects were more likely to use the comment adjunct than TBI subjects, particularly with the researcher, whereas TBI subjects were more likely to ask Wh-questions of the researcher than the controls. A comment adjunct like "I think" was commonly used by control subjects, however whether this was functioning as a negative politeness marker (softening an utterance) or a positive politeness marker (which boosts an agreeing proposition) was not analysed specifically. The following example shows a control subject using this resource in combination with other modal adjuncts to assert a proposition to the researcher about the difficulties of speaking to someone with a brain injury (Example 8.2).

Example 8.2 Control Subject C6 - Researcher condition
Moves 62-67 R = Researcher C = control subject

62	C : ***I think*** um I find **probably** not talking to people with brain injury I **probably** find it **really** hard to **sometimes** to understand them more than anything else
63	C : Yep (nods)
64	S : so you've **gotta got to really** work on the listening skills with them
65	R : mm
66	C : and make sure you listen **very very** carefully
67	R : (nods)

To examine whether TBI and control subjects varied their use of politeness markers according to whom they were speaking, a comparison was made of TBI and control subjects in student and researcher conditions. Results of this analysis can be found in Table 8.4. TBI and control subjects used significantly more politeness markers per clause with the researcher than they did with the students.

Table 8.4 Use of politeness markers per clause by TBI and control subjects across speaker conditions

	TBI (with students) vs. TBI (with researcher) (n = 7)	Controls (with students) vs. Controls (with researcher) (n=7)
Politeness markers per clause	T = 1 (p = 0.01) (Researcher > Students)	T = 1 (p = 0.01) (Researcher > Students)

8.2.2 TBI and controls vs. communication partners

TBI and control subjects were compared with their communication partner (students and the researcher) within interactions in their use of politeness markers. It was expected that the students would use a higher frequency of politeness markers per clause as they were in the role of requesting information. This result was borne out with students using significantly more politeness markers (Mean = 1.1 politeness markers per clause) than TBI subjects (Mean = 0.8 politeness markers per clause) ($U = 6$, $p < 0.01$)(Table 8.2). In contrast, there were no

significant differences in the use of politeness markers between control subjects and the students. Control subjects used a similar proportion of politeness markers (Mean=1.0 politeness markers per clause) when compared to students (Mean=1.05 politeness markers per clause).

In the researcher condition, it was expected that TBI and control subjects would produce more politeness markers per clause for two reasons. Firstly, the subjects were in the role of requesting information and therefore were expected to couch their requests with politeness indicators. Secondly, they were in a less powerful position in this interaction, with the researcher reserving the right to open and close the interaction as well as to direct its course. This did not occur, however, with no significant differences being found between TBI and control subjects and the researcher in the frequency of use of politeness markers.

8.2.3 Comparison of communication partners (students and researcher) across TBI vs. control interactions

As well as examining the linguistic resources used by TBI and control subjects, this research also focused on the communication behaviour of the people with whom they were interacting. The question of interest here is whether the students and the researcher changed their communication when talking to TBI subjects when

compared with the control subjects. The details of the use of politeness markers per clause by communication partners can be found in Table 8.5.

Table 8.5 Politeness markers per clause for partners by speaker group

	Student	Researcher
With TBI (n = 7)	Mean = 1.07 Range = 0.9 - 1.5 S.D. = 0.20	Mean = 1.37 Range = 1.0 - 1.8 S.D. = 0.29
With Controls (n=7)	Mean = 1.05 Range = 0.8 - 1.4 S.D. = 0.21	Mean = 1.33 Range = 1.1 - 1.7 S.D. = 0.20

The researcher and students did not vary their use of politeness markers in interactions with TBI when compared with control subjects (Table 8.6). This may be because the researcher and students used similar rates of requesting and information giving when comparing their use of K1 and K2 moves across TBI and control conditions (see Table 6.10).

Table 8.6 Communication partners' use of politeness markers per clause

Variable	Researcher (with TBI) vs. Researcher (with controls) (Wilcoxon)		Students (with TBI) vs. Students (with controls) (Wilcoxon)		Students (with TBI) vs. Researcher (with TBI) (Mann Whitney U)		Students (with controls) vs. Researcher (with controls) (Mann Whitney U)	
	Obs. Value	Crit. Value	Obs. Value	Crit. Value	Obs. Value	Crit. Value	Obs. Value	Crit. Value
Politeness markers per clause	T = 4 (n=5)*	0.219	T = 7 (n = 7)	0.148	U = 6 (n = 7)	0.009 §	U = 6 (n = 7)	0.009§

* n varies according to tied ranks
§ Significant at p≤ 0.01

When comparing communication partners with each other, the researcher produced a significantly higher frequency of politeness markers per clause than the students with both TBI and control subjects.

To examine the use of politeness markers by interlocutors in greater detail, the three most commonly occurring politeness markers were calculated. These are displayed in Table 8.7.

Table 8.7 Three most commonly used politeness markers by students and the researcher across TBI and control subjects

WITH TBI	**STUDENTS**	**RESEARCHER**
	Modal verb	Modal verb
	1. - ¶	1. S5
	2. S7	2. S2,S3,S4,S7
	3. S1,S2, S6	3. S1,S6
	Modal adjunct	Modal adjunct
	1. S2, S3, S4, S6, S7	1. S1,S2,S3,S4,S6,S7
	2. S1	2. S5
	3. S5	3. -
	Yes/No	Yes/No
	1. S1,S5	1. -
	2. S2, S6	2. S1
	3. S3, S4, S7	3. S2,S3,S5,S7
	Wh-question	Yes/No tag
	1. -	1. -
	2. S3,S4,S5	2. S1
	3. -	3. S2,S3,S5,S7
WITH CONTROLS	Modal verb	Modal verb
	1. -	1. -
	2. C2,C5,C6,C7	2. C1, C2, C3, C4, C5, C6, C7
	3. C3	3. -
	Modal adjunct	Modal adjunct
	1. C1,C2,C3,C4,C6,C7	1. C1, C2, C3, C4, C5, C6, C7
	2. -	2. -
	3. C5	3. -
	Yes/No tag	Yes/No tag
	1. -	1. -
	2. C1	2. -
	3.	3. C3,C7
	Yes/No	Comment adjunct
	1. -	1. -
	2. C3,C4	2. -
	3. C1,C2	3. C1, C2, C4, C5, C6
	Wh- question	
	1. C5	
	2. -	
	3. C4,C6,C7	

¶ This indicates that no subject in that group used this politeness marker as their most common, second most common or third most common choice

This shows that students most commonly used the modal adjunct, then the Wh-question form and finally a similar proportion of Yes/No questions and the modal verb with TBI subjects. They used a very similar pattern with the control subjects, with the most commonly used politeness marker being the modal adjunct, then the finite modal verb and finally the Wh-question form.

The first two most commonly used politeness markers by the researcher were the same for TBI and control subjects. The first was the modal adjunct and the second was the finite modal verb. There was an interesting difference, however, in the third most commonly used politeness marker between TBI and control interactions. With TBI subjects, the researcher was more likely to use the Yes/No question, whereas with the control subjects the comment adjunct was more prominent. The comment adjunct (I think, I mean) was most commonly used by the researcher during information giving exchanges to the control subjects (Examples 8.3 & 8.4) but was also used during requests for information (Example 8.5).

Example 8.3 Control subject C4 - Researcher condition
Moves 83-85 R = Researcher C = control subject

83	C: And and that is that one of the big parts of the rehab is purely speech or?
84	R : Yeah **I guess I mean** there's so many different aspects to brain injury rehab
85	C : Yeah

Example 8.4 Control subject C1 - Researcher condition
Moves 75-78 R = Researcher C = control subject

75	R : and I actually started with my first subject we had a guy who wasn't from Spinesafe but he was doing talks for the Volunteer Centre of NSW
76	R : the SCIP* talks?
77	C : Oh yeah I've heard yeah I've heard of it but I've never sort of had much to do with it
78	R : mm **I think** it's probably similar to what you guys are doing

*SCIP = Schools Community Involvement Program

Example 8.5 Control subject C2 - Researcher condition
Moves 56-57 R = Researcher C = control subject

56	R : mm **I mean** the well the **I think** the MAA* fund Spinesafe as well or partly fund it?
57	C : mm (nods head)

* MAA = Motor Accidents Authority of NSW

8.3 Discussion

8.3.1 TBI vs. controls subjects' use of politeness markers

In Chapter 7, TBI and control subjects were shown to differ in the frequency of politeness markers per clause used in information requesting interactions. The control subjects varied their use of politeness markers according to the genre (i.e., more politeness markers in service encounters) and the tenor, with power imbalance in the police condition being realised through a higher frequency of politeness markers than in other conditions. This variability did not occur in TBI interactions. It was suggested that the TBI subjects' failure to use politeness markers may have been due to an insensitivity to the contextual features of familiarity and social distance, frontal lobe impairments resulting in problems of performance monitoring and social cognition and also to the behaviour of their communication partner. Communication partners were noted to interact differently with TBI subjects when compared with controls. For example, therapists produced fewer politeness markers, whereas police used significantly more politeness markers with TBI subjects than controls. These results led to the question of whether the role TBI subjects were placed in (i.e., an information requesting role with someone in a position of power) contributed to their reduced number of politeness markers per clause. To answer this question, they were placed in a powerful information giving role which promoted conversational rights

not available in the first study. For example, they now had the right to interrupt, to question and to take the floor. They were also placed in a position which facilitated their use of politeness markers so that they did not differ significantly with the control subjects. Politeness markers frequently accompany requests for information. As the frequency of information requesting was similar for TBI and control subjects (as demonstrated by the exchange structure results in Chapter 6), this may also have accounted for the similar use of politeness markers.

The most commonly used politeness marker by TBI and controls was the modal adjunct (e.g., just, possibly, probably, you know). Modal adjuncts express probability meanings so that the speaker can add their judgement of the probability or likelihood of a proposition (Eggins, 1994). TBI and control subjects frequently added modal adjuncts to their propositions during information giving exchanges to both the school students and the researcher. This gave TBI and control subjects a way of tempering the directness of their messages. The most common word combination was "you know" which has been described as a verbal device which provides contextual coordinates for ongoing talk (Schiffrin, 1987); as a verbal filler (Brown, 1977) and as a pragmatic particle (Holmes, 1995). "You know" is a linguistic resource which expresses positive politeness with a solidarity orientated function. It can convey both referential and affective meaning

(Ostman, 1981), where the "speaker strives towards getting the addressee to cooperate and/or accept the propositional content of his utterance as mutual background knowledge" (p. 17). The affective meaning reflects the speaker's appeal to the addressee whereas the referential meaning relates to the presupposed shared knowledge (Holmes, 1995). "You know" has been reported to occur more frequently in informal interactions than in formal contexts (Holmes, 1986), particularly in sections of relatively sustained narrative or accounts of the speaker's personal experiences intended to amuse, amaze, or at least retain the interest of the addressee. It is an example of an interpersonally motivated expression which tones down what is said (Hasan, 1994). It is not surprising, therefore, that this was the most commonly used politeness marker by both TBI and controls in their information giving role.

The modal verb was the second most common politeness marker used by TBI and control subjects. This is another resource speakers can use to modalise or temper their messages (Perkins, 1983). There was one difference between TBI and control subjects, however in the third most commonly used politeness marker. TBI subjects were more likely to ask Wh-questions, whereas control subjects were more likely to use comment adjuncts (e.g., "unfortunately", "I think"). Comment adjuncts add an expression of attitude and evaluation (Eggins, 1994). It could

be speculated that control subjects were therefore more likely to provide their judgment/evaluation of what they were saying than the TBI subjects. The use of questions by TBI subjects can be interpreted in two ways. Questions serve many functions, including being positive politeness devices to encourage talk and contributions from others, or conversely, to challenge and confront. In most cases, Wh-questions were used by TBI subjects to facilitate the talk with the researcher, however there were exceptions with two subjects, S1 and S6. In these cases some Wh-questions by the TBI subjects with the researcher were inappropriate demonstrating poor judgment of the tenor of the interaction. This is typical of what has been previously described as impaired social judgment (Hartley, 1995) and a difficulty with social perspective taking (Santoro & Spiers, 1994). Problems with taking another's perspective results in an inability to see the effects of one's behaviour on another and feedback regarding inappropriateness often does not result in a modification of the behaviour because the person with TBI does not understand what was offensive (Santoro & Spiers, 1994). It would appear that this failure to take another's perspective into account extends to the linguistic resources used at the lexicogrammatical level, and that examining the use of politeness markers may be another avenue to tap into this problem.

The final analysis comparing TBI and control subjects examined whether there was a variation of politeness marker use between the researcher and student conditions. The finding that the TBI and control subjects used more politeness markers per clause with the researcher than with the students demonstrated a clear modification of the wording which was used according to the tenor. In the case of the students, TBI and control subjects were in a more powerful information giving role, whereas in the researcher condition, subjects were in a deferent role which was realised primarily through an increased use of Wh-questions in the case of TBI subjects and comment adjuncts by controls, as well as an overall increase in the use of finite modal verbs and modal adjuncts.

8.3.2 TBI and control subjects vs. communication partners

As well as examining language use across conditions, it is also illuminating to examine how interlocutors utilise linguistic resources within interactions. One clear finding arising from this analysis is that TBI subjects used fewer politeness markers than students whereas control subjects' use was similar to the students. TBI subjects were found to produce fewer politeness markers per clause with a range of communication partners when compared to controls during information requesting interactions. A reduced frequency of politeness markers by TBI subjects with students may be demonstrating that this paucity also extends to

information giving interactions, although not to the same extent. That is, while TBI subjects produced fewer politeness markers than the students, they did not differ significantly from the control subjects indicating TBI subjects produced fewer politeness markers in information giving interactions, but that a manipulation of the context placing them in a position of power reduced the effect of this.

The other interesting finding was in the researcher condition with TBI and control subjects using similar frequencies of politeness markers per clause as the researcher. This may have been for two reasons. The first arises from an examination of the exchange structure data which shows that TBI and control subjects used similar proportions of the K2 move (i.e., requesting moves) in both student and researcher conditions. The second reason may be that the researcher condition represented an example of the "permeability of discourse types" described by Hasan (1994). That is, the researcher condition represented more than simply an information requesting genre for the subjects. It was characterised by dual purposes which were a) to provide feedback regarding the research project and, b) to wrap up the day. The analysis of generic structure potential is useful here to provide an overview of the macrostructure of these interactions (see Chapter 4). The interpersonal aspect of this interaction (also referred to as phatic

communion, [Malinowski, 1923]) appeared to supersede the information giving component, with the increased use of Approach elements and a reduced number of moves in Centring elements when compared with student interactions. This does not mean that this interaction was not a primarily information requesting one for the subjects, as there were significant differences between the researcher and the student conditions in the frequency of use of K1 (information giving) and K2 (information requesting) moves. Despite this, similar proportions of politeness markers by TBI subjects, controls subjects and the researcher may indicate that there was a greater reciprocity in this condition than in the student condition. That is, although the researcher was in a relative position of power compared to TBI and control subjects, the additional interpersonal requirements of this interaction were met with reciprocal use of politeness markers.

8.3.3. Comparison of communication partners across TBI vs. control interactions

The final comparison investigated whether the researcher and the students differed from each other in their use of politeness markers with the finding that the researcher used more politeness markers per clause than the students with TBI and control subjects. This may be linked to the researcher's varied communicative purposes (to debrief subjects, to provide information regarding the research project

and to wrap up the day and thank the subjects) as discussed previously. Many of these functions were realised through the interpersonal resource of politeness markers. At a macrostructural level, this was realised through the use of Direct Approaches (Chapter 4). In contrast, the students' communicative purpose was to request information to enable them to compare TBI and control subjects. A higher proportion of moves in Centring topics at a macrostructural level in the student condition indicates this focus on information exchange. The students used sufficient lexicogrammatical resources to request information, however, the increased use of these by the researcher appeared to be due to the additional requirements of establishing a relationship with subjects to achieve interpersonal goals. Differences may also have been due to gender (Holmes, 1995).

The most commonly used politeness markers by the researcher and the students were also examined. Students used modal adjuncts most frequently, which were usually in combination with a question form such as a Wh-interrogative or a Yes/No question. They also frequently used modal verbs. Students may have used a high frequency of modal adjuncts to soften question forms due to the sensitive nature of some of their questions. The Wh-question form was sometimes used differently in TBI interactions when compared with controls. For example, in some TBI interactions this form was used to redirect or refocus the TBI subject

back onto the purpose of the discussion, whereas in control interactions this did not occur. The use of politeness markers was therefore a powerful way of attempting to redirect the interaction while at the same time maintaining the face of the TBI subject.

The researcher also favoured the use of the modal adjuncts to soften requests for information from TBI and control subjects and to hedge the information giving process. Modal verbs were also frequently used with both TBI and control subjects. There was one linguistic feature used by the researcher that was different across TBI and control conditions. The researcher's use of Yes/No questions was more frequent with TBI subjects whereas comment adjuncts were favoured with control subjects. The significance of the Yes/No question is difficult to ascertain, however this appeared to be a way for the researcher to encourage the TBI subjects to remain involved in the interaction, while at the same time maintaining some control by limiting their responses. In contrast, the use of comment adjuncts appeared to be used by the researcher to soften or attenuate assertions made to the control subjects while giving an opinion or providing "expert" information regarding TBI.

8.4 Summary

8.4.1 List of findings - Use of Politeness Markers

Investigation	Finding
TBI vs. Controls	No difference between TBI and Controls in the frequency of politeness markers per clause with students and researcher **Commonly used politeness markers** TBI: Modal adjuncts, modal verbs, Wh and yes/no tag questions Controls: Modal adjuncts, modal verbs and comment adjuncts TBI and Controls used more politeness markers per clause with researcher than students
TBI & Controls vs. Communication Partners	**Politeness markers per clause** Students> TBI Students = Controls Researcher = TBI Researcher = Controls
Comparison of Communication Partners with each other	Researcher > Students with both TBI and Controls **Commonly used politeness markers** Students: Modal adjunct, Wh-questions, modal verb with TBI and Controls Researcher: Modal adjunct, modal verb and yes/no tag with TBI, comment adjunct with Controls

8.4.2. Conclusions

Politeness is behaviour which actively expresses positive concern for others as well as providing for non imposing distancing behaviour (Holmes, 1995). In this chapter, as with Chapter 7, the notion of politeness has been examined through the use of linguistic markers within the mood and modality system (Halliday, 1985). These politeness conventions embody, and their use implicitly acknowledges and reproduces, social and power relations. Examining the use of politeness markers is a way of gaining insight into the social relations within the practices and institutional domains in which they are used (Fairclough, 1992). One of the goals of this chapter was to examine whether placing the person with a TBI in a powerful information giving role would enable them to utilise politeness markers to a similar extent to control subjects. As this was largely achieved, there are important implications for assessment and therapy for TBI patients. Previous studies examining TBI subjects' discourse have not specifically studied the wording used to express requests, opinions, thoughts and ideas or the effects of context on these. This may be partially due to the assertion that TBI subjects have intact syntax at sentence or clausal levels except for some word finding difficulties (Hartley & Levin, 1990). The wording speakers use to express their ideas is crucial to the way others perceive what is said and will have a direct influence on the linguistic choices which are made available to the interlocutor (Halliday,

1985). Even though TBI subjects are thought to exhibit intact language structures at clause and sentence levels, with the primary area of breakdown being at the level of discourse, the present research illustrates the need to examine all levels, due to the interdependence of the different levels of language.

The way a request is worded (i.e., realised at the level of lexicogrammar) is dependent on factors such as who is in the role of requesting the information, who they are requesting it from and the situation of both interlocutors. It is not sufficient to say after assessing a person with TBI that they have difficulty requesting information appropriately because of a failure to use politeness markers. The context in which a request takes place must be taken into account. This research shows that if the context is manipulated to provide optimum communication opportunities, TBI subjects can produce similar proportions of politeness markers to control subjects. Optimum opportunities can be structured by taking the effects of power, social distance and communicative purpose into account. Much of the research into communication following TBI has failed to consider these characteristics, as subjects have been examined in interactions with speech-language pathologists or research assistants where a power imbalance exists. The linguistic choices at clause level have therefore been constrained by the context, particularly the speaker role the subjects have been placed in. This

research suggests that TBI subjects need to be examined in a range of contexts which represent formal and informal contexts, varied social distance and power relationships and changes in speaker role (i.e., from information requester to information giver).

The therapeutic benefits of manipulating context to enable communication opportunities for TBI is a significant implication of this study. It was not only the change from information requester to information giver that appeared to be effective, but also the elevation of the person into a position of relative power. That is, merely allowing a patient to be in an information giving role within a therapy session will not afford them the opportunity of using similar proportions or types of politeness markers as the therapist. The inherent power difference will always be apparent in the therapist-patient interaction. The challenge is to explore new communicative contexts which provide a positive power differential for the person with TBI. This supports Fairclough's (1992) assertion that changes in discourse may lead to wider social and cultural change, with establishment of new social identities and views of self. These issues will be discussed in further detail in Chapter 9.

The second part of this chapter examined whether a manipulation of speaker role from information giver to information requester would be reflected in the wording used. That is, if the TBI and control subjects were placed in different roles would they use different wording. As both groups used more politeness markers with the researcher than with the students, it would appear that this type of manipulation has a powerful influence over the words that are used. Given the expected change in exchange structure results it is not surprising that the politeness marker analysis reflected increased use of politeness markers with increased requesting behaviour. The increase in politeness marker use may reflect the power imbalance in the researcher condition and an attempt to save the researcher's face (as occurred in the police condition in the first study, see Chapter 7).

A final consideration in this chapter was the behaviour of the communication partners with TBI subjects when compared with controls. In the information requesting study reported in Chapter 7, police officers used significantly more politeness markers with the TBI subjects than controls. In contrast, the students and the researcher used similar proportions of politeness markers with both groups. In the case of the students, their speaker role resulted in a similar amount of requesting behaviour to both TBI and controls, as well as similar amounts of information giving. The researcher condition was more complicated because it was

characterised by a range of communicative purposes which meant that the use of politeness markers did not simply extend to an information giving role, but also to the interpersonal functions of debriefing subjects, thanking subjects and wrapping up the day. The interpersonal functions were realised through similar proportions of politeness markers to both TBI and control subjects. Thus both student and researcher conditions provided TBI and control subjects with similar opportunities to negotiate meaning. In the student condition this was because they were in a powerful information giving position; in the researcher condition this was because of the interpersonal work that was needed to complete the data collection process.

Chapter 9
Interpersonal characteristics of TBI interactions - some clinical implications

9 Introduction

Traumatic brain injury is a catastrophic event which changes an individual's life, and usually has serious ramifications for family members and the community. One of the most debilitating impairments which may follow TBI is difficulty with communication. This potentially has far-reaching effects on a person's ability to return to their previous roles as husband, son, father (they are usually male), employee and to reintegrate into the community. Previous research has viewed the communication difficulties following TBI from a deficit-driven perspective. Deficits have been described in terms of phonological, lexical, syntactic and other more global communication impairments. Tasks given to assess these deficits are often monologic (i.e., the person with TBI is evaluated on their performance during tasks such as telling a story or describing the procedure underlying simple every day activities). Procedural and narrative tasks provide valuable information regarding particular linguistic parameters such as story structure or cohesion, however they cannot be extrapolated to the wider strata of everyday interactions. Frequently, research has failed to include interlocutors other than the therapist and the person with the TBI. This way of viewing communication impairment following TBI is flawed for two reasons: 1) it provides too narrow

a description of communication limited to deficits and omitting strengths, and 2) it fails to illustrate the complexity of the two-way nature of interactions and the effect of the interlocutor's contribution on the person with TBI's communication. Therapy interactions with TBI subjects are an example of institutional discourse (Agar, 1985; Simmons-Mackie, Damico & Nelson, 1995) which has an inherent power imbalance. The most current research findings regarding TBI subjects' ability to interact are therefore based on one particular context, and cannot be generalised to other contexts.

These problems were addressed in this thesis by evaluating a range of everyday interactions of people with TBI as two-way processes. The interlocutors' contributions were investigated by varying their relationship with the person with TBI and examining the effect on the resulting talk during structured information requesting and information giving interactions. This design is fundamentally different to previous reports of communication following TBI as it examined the effect of the role of the communication partner on the communication potential of the person with TBI. This research demonstrated that the ability of the person with TBI to interact was significantly influenced by their tenor relationship with the interlocutor. The variable of tenor incorporates the parameters of social distance and power. Varying these factors resulted in

different communicative choices being made available to the person with TBI, which in some cases limited their options when compared with control subjects. These findings indicated that there were significant differences in the interactions of TBI subjects when compared to controls which have not been described previously. The analyses enabled an appraisal of the complexity of the interpersonal meanings expressed in TBI interactions. The results of this thesis showed similarities and differences between TBI and control interactions, capturing both general trends and individual variation. By utilising the complexity of the systemic functional linguistic analyses and taking the context of situation (i.e., field, tenor and mode) into account as well as the genre and ideology of participants, this thesis has provided a description of TBI interactions to a level of detail not previously reported. The results have significant clinical implications. The following section incorporates these implications and suggestions for clinical practice with current models of assessment and intervention for TBI.

9.1 Implications and current models of assessment and intervention for communication impairments following TBI

The current models of assessment and intervention for communication impairments following TBI fall broadly into two areas: cognitive-communication

perspectives and functional perspectives to rehabilitation. These perspectives in rehabilitation may occur simultaneously, and are dependent on the stage of recovery (Ylvisaker & Szekeres, 1994).

9.1.1 Cognitive-communication perspectives

The cognitive-communication impairments model for rehabilitation is concerned with the cognitive bases of communication. The focus on cognition arose from an examination of the underlying pathophysiology of TBI which commonly results in multi-focal cerebral damage with a preponderance of injury to the frontal lobes (Alexander et al., 1989). Three methods have been developed to manage cognitive-communication impairments: facilitation-stimulation techniques, component process retraining and compensatory strategy training. The use of *facilitation-stimulation* techniques aim to maximise recovery by stimulating an individual at a level that permits optimal processing and performance. Activities, which are most common in the early stages of treatment, are graded to increase alertness, understanding of the environment and adaptive behaviours (Haarbauer-Krupa, Henry, Szekeres & Ylvisaker, 1985). The second method, *component process retraining* involves improving a person's specific impairments or the cognitive or language processes that are defective due to brain injury with the aim of ultimately improving functional skills (Ben-Yishay

& Diller, 1993). *Compensatory strategy training* teaches the person with TBI to overcome areas of deficit through the employment of internal compensatory strategies or external aids (e.g., use of a diary for memory impairment) (Ylvisaker & Szekeres, 1994).

Cognitive rehabilitation techniques are reported widely in the United States and Australia. For example, in a survey of 252 brain injury programs in the USA, 95% were reported to use cognitive retraining activities (Ben-Yishay & Diller, 1993). They have been criticised, however, for a number of reasons: a) being favoured for financial reasons, as this type of therapy enables therapists to treat a number of patients with computer tasks concurrently, thus being a cost efficient alternative to one-to-one therapy, b) a failure to demonstrate treatment effectiveness (e.g., Ponsford & Kinsella, [1988] reported that cognitive rehabilitation had no advantage over other techniques), c) psychometric instruments used to assess outcomes lack ecological validity and d) there is a disjunction between the notion of cognitive-communication tasks and the complex nature of interaction (Hartley, 1995). Interactions are not a set of cognitive skills or rules which can be relearnt but rather are the result of the complex interplay of the context and purpose of an interaction. Cognitive rehabilitation techniques may be an important component of treatment programs

for TBI patients, however, they have not been demonstrated to restore the skills needed for interactions. It has been suggested that interactional skills need to be worked on in the context in which they occur (Hartley, 1992; Malkmus, 1989; Ylvisaker et al., 1993a).

The relationship between cognition and discourse structure has received much attention in the wider psycholinguistic literature (Schank & Abelson, 1977; van Dijk, 1977), and this has gradually filtered through to examinations of TBI discourse. For example, it has been suggested by Chapman et al. (1992) that their TBI subjects had difficulty producing sufficient elements in a story because of an underlying impairment in their internal story schema. They further postulated that frontal lesions may disrupt the organisational schema which guide discourse formulation. This would suggest that these subjects may have difficulty with the cognitive requirements of structuring narrative discourse, however, there has been a paucity of research examining the structure of TBI interactions. Kennedy & DeRuyter (1991) reported that conversation was easier than narrative production for TBI subjects. The results of this thesis demonstrated that the structure of TBI interactions differs significantly according to the genre of the situation, and that this needs to be taken into account when evaluating people with TBI in interactions. The importance of taking context

into account is of central concern to functional approaches to rehabilitation which are outlined in the next section.

9.1.2 Functional perspectives

The development of functional approaches for the assessment and treatment of communication impairment following TBI was the result of a paradigmatic shift in the social sciences, and, more recently, in clinical domains. The traditional methods of assessing and treating neurological communication disorders were the product of a paradigm which called for quantitative methods of data collection under highly controlled conditions. Language was viewed as a set of component processes which, if found to be deficient, would form the targets of therapy in structured clinical settings. Functional approaches, in contrast, consider psychosocial and cognitive as well as linguistic factors in the performance of everyday communication activities. Evaluation under this paradigm considers both deficits and preserved abilities and self-generated compensatory strategies, and treatment occurs within natural settings using everyday tasks to capitalise on strengths as well as weaknesses (Hartley, 1995).

Functional approaches to TBI rehabilitation are seen to bridge the gap between the medical setting and the social world in post-acute stages of rehabilitation, so

that patients can achieve the highest level of functioning in living, social, work and academic activities (Malkmus, 1989). As an intervention strategy, functional approaches employ a top-down path, where the desired outcomes, based on adult roles and activities, are identified first and competencies needed for those outcomes are then the targets for intervention (Hartley, 1995).

These tenets of functional perspectives to TBI rehabilitation have, to a certain extent, been responsible for the initial development of the questions in this thesis. A major problem, however with the functional approach to communication rehabilitation is the lack of linguistic specificity (Armstrong, 1991). Measurement instruments developed from this perspective provide direction for broad treatment goals (e.g., the Environmental Needs Assessment of Hartley, 1992), however, they fail to evaluate the specific roles that language plays in these interactions. In most cases, these assessments focus on the person with TBI's performance on a checklist of pragmatic items (e.g., Pragmatic Protocol, Prutting & Kirchner, 1983; Clinical Discourse Analysis, Damico, 1985). In contrast, the analyses presented in this thesis allowed for an examination of concurrent multiple levels of language functioning (at the level of clause, exchange and genre) in everyday interactions. More importantly, the analyses were examined in the light of the relationship between interlocutors

(their role, social distance and status) and the genre. This thesis therefore extends the functional communication perspective by relating specific aspects of context to the linguistic realisation of the texts across a number of levels.

Clearly, there are significant issues, yet to be resolved, concerning the investment of time on the part of the therapist. Clinical reality does not permit many hours of data analysis. But this thesis has given some direction for designing therapy programs while taking context into account. The utility of language analysis in clinical practice is receiving increasing attention. For example, Boles and Bomard (1997) investigated appropriate and useful sample sizes for the examination of features such as conversational repair and speech rate with the finding that a ten minute sample of a conversational dyad between an aphasic and a normal communicator was adequate to detect repair strategies in approximately 80% of cases. Further studies of this type are needed to assist the therapist in obtaining samples which are of sufficient length to provide meaningful data for treatment purposes while being time efficient.

The context of situation (field, tenor and mode) determines the language choices which are available to interlocutors. Results indicated that varying the tenor variable resulted in a significant difference in the language choices made by

interlocutors in TBI interactions. Systemic functional linguistics takes the context of the communicative act into account. This may appear similar to the description of factors to be aware of in the pragmatics literature, however there are critical differences between the two approaches. Most accounts from the pragmatics literature cite participants, setting and mode of communication (Hartley, 1990) but there is no further elaboration as to what effects these factors can possibly have on the language that is used. SFL provides a series of detailed frameworks which delineate the rich nature of the language choices that are available according to the field, tenor and mode, or the context and the genre. As well as this, it allows an appreciation of factors such as the ethnicity, class and generation of the participants, which are realised by the choices speakers make at all levels.

9.2 Implications for assessment and intervention from this thesis

Research studies which have investigated interactions with TBI subjects have been typically carried out in a clinic room or university setting. The tenor relationships involved in these assessments, regardless of their physical location, are those of a therapist-patient/client/subject. This immediately places constraints on all levels of the meanings which can be made because of the roles interlocutors are placed in. These constraints are rarely taken fully into account

in current investigations of TBI discourse. Frequently, a TBI patient's communicative status is determined by their performance during a speech-language pathology assessment. SFL would suggest that the genre of an interview with a clinician provides a narrow range of communicative options for the person with TBI, when compared with the variety of meanings they may need to use during everyday interactions. Therefore such an assessment does not provide an adequate view of the communicative status of the person with TBI.

As noted in Chapter 1, another frequent observation is that people with TBI have difficulty adapting from one context to another. Their subtle cognitive language impairments are manifested when they are placed in functional situations which demand high levels of integration (Milton, 1988). The results of this thesis suggest that an impaired ability to adapt to new situations may potentially be reinforced *by* the clinical interaction. By assessing and treating patients in the same context over time (i.e., the clinic room), therapists are fixing the tenor variable. The challenge is to provide TBI patients with the opportunity to exercise language choices over a wide range of tenor relationships.

There are two main aspects to the phenomenon of tenor. One of these is social distance between the participants and the other is power imbalance (Martin,

1992). Social distance is concerned with how familiar interlocutors are with one another. Power relates to who has control in the interaction. The therapy interaction is an example of how familiarity may vary over time, but where there is always an inherent power imbalance (Green, 1984; Silvast, 1991). One way of challenging the power imbalance is to vary the typical therapy session. Silvast (1991) described the typical session with aphasic patients as "therapist makes a request for information, aphasic responds, often with an extended answer, and therapist follows.. with short answers" (p.388). This is also typical of "conversations" which occur in the clinic with a person with TBI.

One of the significant findings of this thesis is that the TBI subjects demonstrated strengths in communicative contexts other than the therapeutic one. This was particularly so for the bus timetable condition in the telephone requesting study (Chapters 3,5,7). The analysis of generic structure revealed that TBI subjects used similar proportions of service request moves as control subjects. Similarly, the exchange structure analysis found that TBI subjects were in the information requesting role (K2) to a similar degree to the control subjects, and finally, the analysis of politeness markers was similar for TBI and control subjects in this condition. In this case, the bus timetable person was completely unfamiliar with the TBI subject, and the power imbalance was in

favour of the TBI person as a *customer*. They were expected in that role to make a request for information, and the bus timetable person was expected to provide that information. Therefore the contextual configuration was preset so that they could be at their most successful when compared with other conditions. The issue of roles in the interactions is important here. The different roles they had in each interaction (e.g., customer, son, patient) also had a major influence on the way TBI subjects made requests (Chapter 5) .

In the second study (Chapters 4, 6, 8), the context of situation and the genre were manipulated to position the TBI and control subjects in an information giving role with school students, which was a more powerful role than that of information seeker. This resulted in TBI subjects using language resources in similar ways to control subjects at all three levels of analysis (generic structure analysis, exchange structure analysis and use of politeness markers). TBI interactions were characterised by similar proportions of moves in the generic structure elements as control interactions. The most significant similarity was the similar proportion of moves in the Centring element, which encompassed the primary goal of the interactions. From the analysis of exchange structure, TBI subjects evidenced similar proportions of information giving (K1 moves) as control subjects, and students used similar amounts of information requesting

moves with both TBI and control subjects. Finally, TBI and control subjects used similar proportions of politeness markers with the school students and students used similar proportions of politeness markers with TBI and control subjects. This confirms that the roles speakers are expected to assume can have a powerful effect on the language choices that are available to them. With this knowledge, it may be possible to design individual treatment programs for people with TBI which initially maximise their communication potential through the contexts and speaker roles they are placed in, and then gradually approximate more "difficult" communicative situations where they are in less powerful roles.

9.2.1 Assessment and treatment for the person with TBI

The emphasis on functional tasks being incorporated into treatment programs is receiving increasing attention, with the emergence of social-environmental approaches to rehabilitation (Ylvisaker et al., 1993a) and through the creation of positive communication cultures for people with TBI through training of communication partners (Ylvisaker et al., 1993b). This thesis builds on these approaches by providing a framework to more specifically address the language being used in functional tasks, by taking into account the context and genre of the situation.

The results of this thesis have significant implications for the assessment and management of interactional impairments and disabilities following TBI. The implications can be broadly divided into two areas. The first relates to the design of treatment programs for the person with TBI and the second is for education of communication partners of people with TBI. The task of the clinician in rehabilitation for communication impairments is to facilitate and broaden people's options so that they are able to communicate in a variety of contexts (Hartley, 1995).

The SFL framework allows practical functional tasks to be analysed in greater depth. It also provides a framework of choices that are available to both speakers at any time which is flexible by taking into account a myriad of factors which we know impact on language production (e.g., speaker roles, relationships between interlocutors).

The treatment implications from an SFL approach to assessment are wide-reaching and significant. If the therapy interaction is viewed as only one of many contextual configurations that TBI patients may be faced with, it becomes clear that less time needs to be spent talking with them in the clinic, and more time needs to be spent facilitating their interactions with others. TBI patients need

to be exposed to as many different genres, tenor relationships, fields and modes of communication as is practical. In the first study, the telephone appeared to be a useful way to access different types of genres and tenor relationships. These types of activities have been traditionally referred to as "carryover" or "facilitating generalization"(McReynolds, 1989; Stokes & Baer, 1977; Ylvisaker et al., 1992). The difference with the approach suggested in this thesis is that these tasks are viewed *as* the therapy from the beginning. The different levels of meaning in the language can be explored *during* the task.

Some of the difficulty with treatments which arise from rating scales and checklists is the problem of knowing where to go next. Treating topic maintenance or problems with speech act pairs may only be scratching at the surface of the problem. To provide an indication of the treatment directions of each of the levels of analysis addressed in this thesis, the following three sections address possible suggestions for clinical practice in the rehabilitation of the person with TBI.

9.2.1.1 Treatment suggestions at the level of genre

The two genres which were investigated were the service encounter in the telephone requesting study (Chapter 3), and the structured interview in the

information giving study (Chapter 4). As these genres are different in their structure, they will be discussed separately.

9.2.1.1.1 Service encounters

Service encounters account for a significant amount of everyday communication exchanges, therefore therapy focusing on service encounters has the potential to have a significant impact on the communicative effectiveness of people with TBI. Examining service encounters can be logically extended to the way we work with people with TBI to communicate more effectively, as well as to the education of others who are in service industries, and who need to deal with the public. The structural elements of the GSP model offer the clinician direction in focusing the person with TBI on problem areas (such as during the greeting or service request). The provision of cues such as written cards, and practising with the clinician before phoning could potentially help the person with TBI to hone their skills. It would also be possible to provide pre-determined non-verbal signals (such as a wind-up signal) during a call to the client if they were producing inappropriate remarks or repeating themselves. Practice on the telephone is a clinically practical way of accessing a number of different service encounters without needing to leave the clinic room. Service encounters could also be trained outside the clinic room (e.g., a number of different service encounters

could be incorporated into a shopping outing). The service encounters could be varied according to the complexity of the request, the speed at which the encounter would need to occur (e.g., time pressure in a crowded shop vs. an empty shop), the mode of the interaction (i.e. spoken only, written only or a combination of spoken and written, e.g., bank transactions), and the field and tenor of the interaction (e.g., buying goods from a grocery store vs. making an enquiry to a government department).

This raises questions about what constitutes a normal service encounter. As detailed in Chapter 1, the structure of service encounters has been well described (Hasan, 1985; Ventola, 1987). There is an expected sequence of events and recursion and variation of generic structural elements. The telephone requesting study compared TBI subjects with matched controls to attempt to quantify in some way the interpersonal communication differences which typify TBI interactions. The differences found in the TBI interactions (such as incomplete, absent or repeated elements) were viewed as not conforming to the model described by Hasan (1985). This model can therefore assist the clinician to decide which elements to work on. Goals could include eliminating inappropriate or repeated elements, or including elements which had been deleted. The important aspect of this analysis is the notion of the flexibility of

the system, while at the same time recognising that there are obligatory elements which must be present for the service encounter to be successfully completed.

Improving communication in government agencies, private organisations and in those dealing with the public generally is becoming increasingly relevant. In recent years there has been an increased awareness of people with disability with the development of training programmes for "uniformed" sections of the community (e.g., police) to address communication and empowerment (e.g., Brennan & Brennan, 1994). This research would suggest that training of community and service agencies may be appropriate and effective. For example, members of the police service may benefit from increased awareness of the effects their power imbalance may have on interactions, particularly when they are dealing with people who are communicatively impaired.

9.2.1.1.2 Structured interviews

The generic structural elements of the structured interview gave some insight into how TBI interactions varied from control interactions, particularly with regard to the use of Approach elements, which were those segments of talk devoted to breaking the ice. For example, in the control interactions, the Approach elements were used to establish interpersonal links, by discussion of safe topics, to

facilitate the introduction of the more confronting Centring elements. While this also occurred in some TBI interactions with students, the Approach elements were sometimes used by students to refocus the TBI subject on the purpose of the interaction, or to smooth over an abrupt topic change, whereas they were not used in this way in control interactions. Differentiating Approach elements from Centring elements may help the person with TBI to distinguish the difference between formal and informal genres. Reported difficulty with overfamiliarity or an inability to adjust to different contexts may be addressed by contrasting the macrostructural elements of these situations.

The structure of an interaction is directly linked to the communicative purpose. If the communicative purpose is lost (as was the case with TBI subject S6), the resulting GSP will reflect this. Treatment could provide a link between the communicative purpose and the expected structure of an interaction. For example, the proportion of moves devoted to Centring in an interview with a clinician would be expected to be greater than during a short chat with a friend at the bus stop. Treatment addressing the overall structure of interactions has been limited to the notion of topic (e.g., Perkins et al., 1995). One of the difficulties of working with topic in TBI has been the challenge of measurement (e.g., Mentis & Prutting, 1991). Linking topic management to the genre and

communicative purpose of TBI interactions has been discussed in general terms with the practice of scripts for particular situations being suggested for TBI patients (Hartley, 1995, Szekeres, 1992); however, the linguistic realisation of these scripts has not been described. GSP analysis provides such a description.

It has frequently been reported that TBI subjects benefit from external structure. By providing some cues regarding the expected structure of different interactions it may be possible to assist TBI patients with the cognitive reordering that Kennedy and DeRuyter (1991) suggest is deficient in TBI discourse. Increasing the person with TBI's awareness of inappropriate and repeated elements may also help to reduce their frequency.

9.2.1.2 Treatment suggestions at the level of exchange structure

Requesting and providing information and action is the basis of all interaction (Halliday, 1985). Exchange structure analysis provides a detailed account of how information is exchanged, with implicit links to the context of the situation, the genre and the ideology of the participants. Therapy could be designed to incorporate both information requesting and information giving tasks. For example, an information requesting task could involved the person with TBI enquiring about information in a telephone service encounter. Emphasis could

be placed on the fact that the person is phoning to ask for information and therefore might expect to be given some information. Without giving enough information in their request they cannot expect to receive a suitable answer. The use of keywords to prompt all the main concepts in the request could be useful. The notion of communication breakdown could be described with reference to the use of dynamic moves, especially asking for clarification and perhaps repeating information to confirm and help them to remember. Backchannelling during the service compliance could also be addressed as an important interpersonal resource, to let the speaker know that the person with TBI is listening.

The role of information giver is powerful as it provides the speaker with an opportunity to take the floor (Edelsky, 1981, Poynton, 1985) and is often determined by the context and the genre. For example, those in a position of relative power are more likely to be information givers (e.g., teachers, doctors, supervisors, therapists). The greater the equality between interactants, the more likely they are to behave linguistically in parallel or symmetrical ways: equals have the right to take on the role of primary knower (information giver). Conversely, the greater the inequality between interactants, the more likely it is that their linguistic behaviour will be non-reciprocal: superiors have the right to

nominate topics and provide information (Poynton, 1985).

The speaking situations the person with TBI is placed in can be manipulated to place them in information giving roles, and therefore give them opportunity of being in a position of power. This is in contrast to the typical therapy session, where the TBI patient is only in this role when the therapist hands it to them. For example, using exchange structure allows an examination of the options available to a therapist when interacting with clients. In initiating an exchange a therapist can interview clients, set the agenda for a session and provide evaluation of performance. The TBI client is far more constrained in what they are able to say or do: they mainly answer questions and perform tasks. By recognising the constraining characteristics of a typical therapy session and indeed many of the interactions people with TBI may be having, it is possible to design contexts which will enable them to take on new roles. Orienting new clients to a brain injury service; involving clients in education sessions with families, peer review in groups, pairing newer patients with those who are longer term during group activities such as shopping, cooking life skills etc. would place the person with TBI in such a role. Involvement in community education is ideal. This change in emphasis on the information giving role within a medical discourse model represents a profound shift in the clinician's role.

9.2.1.3 Treatment suggestions at the level of the lexicogrammar - politeness markers

Poynton (1985) describes the rights or privileges of those in power in an interaction. Some of these include the right to use name forms, and to use expletives or slang. Those in power are also described as being more likely to use familiar names, to use high modalisation forms and to use congruent forms. Those in deferent positions are described as being more likely to use respectful names, to use low modalisation forms and to use interpersonal metaphor. The TBI subjects did not use these linguistic resources and therefore some communication partners (e.g., the police) changed the way they communicated. However while using these politeness forms, the police still had ultimate control over the interactions, and in some cases they appeared to overplay the politeness possibly to the detriment of the person with TBI.

There has always been the problem of capturing the essence of exactly what constitutes communication problems following TBI. Tannen (1981) described the "subtly calibrated monitoring devices which make conversation possible" as "the sharing of conversational strategies that creates the feeling of satisfaction which accompanies and follows successful conversation: the sense of being understood, being on the same wavelength, belonging and therefore of sharing

identity" (p.222). She described the converse of this as "not being understood, not belonging - therefore of not sharing identity" (p.222). While Tannen was referring to ethnicity in this quotation it holds equally well in describing communication problems following a TBI. The advantage of examining politeness markers is that we can tap into the subtlety of interaction and measure the use of these resources. Once we are able to measure them we should be able to help the person with TBI tune in to them once more and be aware of the effect of their communication on others as well as modify the way they communicate. From these results it would appear that work on initial requests and opening sequences could significantly assist a person with a TBI to "get off on the right foot". For example, if a patient is requesting information (a service request in the generic structure potential analysis) by baldly asking for information without using politeness markers, the service request can be examined in more detail with the patient. The use of polite requesting forms could be suggested, particularly when the request was to someone completely unfamiliar and especially if they were in authority. For example, the difference between asking "Could you tell me how much a large supreme pizza would cost?" (i.e., using grammatical metaphor) in contrast with "I wanna know the cost of a pizza" could be discussed and a wide variety of choices or alternate forms and their contexts practiced with the patient.

9.2.2 Education of communication partners of people with TBI

Finally, the interpersonal metafunction in particular appears to tap into the interactional impairments of TBI (Hartley, 1995), because it taps into what happens between the speaker and the hearer and therefore encapsulates the two-way nature of interactions. It also allows us to focus on the possibility that some of the communication problems we describe in those who have a severe TBI may partly be the result of their environment or the language choices that have been made available to them by their communication partners. This view is quite the opposite of the deficit-driven approaches. The person with TBI will have some strengths and intact language resources which can be inhibited by the language choices of their partner. Training communication partners to be aware of the impact that they may have on the person with TBI is an obvious implication from this line of reasoning.

Communication is a two-way process. Focusing on changing the communication behaviour of the other communication partner may contribute to the TBI individual's communicative appropriateness, efficiency and effectiveness. Part of the difficulty of modifying the communication behaviour of TBI individuals is the cognitive limitation imposed by their frontal lobe damage (Ylvisaker et al., 1992). An intervention aimed at improving the *interaction* may be potentially

more cost effective than traditional treatments because they would be with people who are cognitively intact. This is partly because the process would be considerably shorter than working with the brain-injured individual alone.

An example of this line of thinking would be to undertake training with police officers to change the way they communicate with people with TBI. The specific communication problems identified in the interactions of the police included: a) overcompensating by speaking too slowly or in other ways infantilising the TBI subjects, b) not giving TBI subjects an opportunity to communicate, c) failing to provide natural consequences for communication successes or failures, d) asking questions that they already know the answer to, e) asking for confirmation of information given by the TBI subjects, f) asking for the same information repeatedly to check on its accuracy and g) failing to follow up information given by the TBI subjects.

To address these problems, participants could be trained to reduce the number of questions which ask for personal information, to reduce the number of questions which check on accuracy of information given, to increase the number of questions related to the inquiry being made, to increase the number of follow up questions, to reduce the length of opening sequence of inquiries and to

increase the length of the closing sequence of phone inquiries. These goals could be operationalised through the following procedures: a) use of case studies, scenarios and role play will provide real contexts for learning (Hartley, 1995), b) use of video and audio recordings to immediately feedback and gradually shape performance to facilitate participants' ability to modify their communicative behaviour (Haarbauer et al., 1985; Ylvisaker et al., 1993a) and c) practice with people with TBI within group sessions to help generalisation of skills.

Family training and training community agencies has received increasing attention in recent years (DePompei, Zarski & Hall, 1988; Ylvisaker et al., 1992; Ylvisaker et al., 1993b). Ylvisaker (in press) described the concept of the co-construction of narratives, where family members and teachers were trained to be aware of their own communicative style and behaviours in their attempts to communicate with the person with TBI. A possible next step is examining the finer details of communication in different contexts and working through these with the family or friends. By examining video or audio taped feedback and making suggestions using the SFL framework, it may be possible to target the language that both the person with TBI and their communication partner are using that is both facilitative and non-facilitative. Ylvisaker's (in press) description of collaborative/noncollaborative style and elaborative/nonelaborative

style fits well here. The underlying notion is that rather than the therapist prescribing ways to communicate with the person with TBI, the communication dyad works together with the therapist who will analyse the discourse and make suggestions. The therapist has the tools to work with, but ideally these tools could be handed over to the person with the TBI and their communication partners. This is the essence of empowerment, and ultimately should be one of the primary goals of the treatment process.

This research sought to apply some of the tenets of SFL and critical linguistics to TBI. Fairclough (1989) reported the effects of discourse on the construction of social identity, social relations and systems of knowledge and beliefs. If discourses limit a speaker's social identity to being a secondary knower, to being a question asker and not an information giver, the reality will reinforce their beliefs that this is what they are. Halliday (1978) has talked about the establishment of identity and social relationships as falling within the realm of the interpersonal metafunction. By using the analyses within this metafunction it is possible to focus on how participants negotiate and position each other. Removing the overt markers of power asymmetry between people of unequal institutional power is a way of democratising the discourse. (Fairclough, 1990). This democratisation is linked with a shift in power away from producers to

consumers - in other words, facilitating this shift aids the process of advocacy for people with TBI. The challenge is to incorporate the concept of advocacy in the very way therapists interact with people with TBI and also in the communication opportunities which are afforded them during their rehabilitation.

Chapter 10

Final comments

10 Conclusions

This research was inspired by the clinical observation that people with TBI appeared to interact differently with their families and in the community when compared with their interactions with therapists. The observation that communication partners appeared to respond differently to people with TBI when compared with controls also played a role in the development of the research design of this thesis. An example was given in Chapter 1 of a subject with TBI (S1) requesting information from a police officer. Instead of being given the information directly (which occurred in the case of the matched control, the normal brother), the policeman asked questions that both he and S1 knew the answer to and checked whether S1 understood during the information giving process. Contrast this example (p. 1) with the following text which S1 jointly produced in an information giving role with school students:

Example 10.1 TBI subject S1 - Student condition
Moves 129-172 A&B=Students S = TBI subject

129	K2	B : So were you in hospital for a while or after the accident?
130	K1	S : About fourteen months
131	excl	A : Fourteen months!
132	K1	S : El-Eleven months I was in there permanently

133	bch	A : Yeah
134	K1	S : and then for the next five months I only used to go in just to the gym while my parents were in the hospital just spend the day there
135	bch	B : Oh yeah
136	K1	S : and sometimes long weekends in hospital
137	K1	B : long weekends - that's no good in hospital
138	K2	B : Did um - couldn't wait to get out eh?
139	K1	S : Yep - my most - the thing I enjoyed the most was standing on my own two legs for three seconds after the accident
140	cfrq	B : You did do that did you?
141	rcfrq	S : My father lifted me out of bed
142	K1	S : I was bedridden for eleven months and 27 days
143	bch	B : mm
144	K1	S : and he stood me up beside the bed and he held my shoulders and try to stand on your legs
145	bch	B : mm
146	K1	S : and for about three seconds and I started to fall
147	K1	S : he picked me up and put me back in bed
148	K2f	B : Yeah
149	K2	B : What suppose was he supposed to do that or he just
150	K1	S : Oh he said "what do you want to do more than anything?"
151	K1	S : I said " I want to be able just to get up out of bed"
152	K2f	B : Yeah
153	K1	S : Being twenty years of age it's not the best having your 21st birthday in bed

154	└	K2f	B : (nods)
155	┌	K2	B : what so you weren't so you weren't in a wheelchair or anything [just in bed
156	├	K1	S : No
157	└	K2	B : [just in bed
158	)	K1	S : I had plaster on both my legs from my ankles up to my hips
159	)	K1	S : I had plaster on my left arm from my wrist up to my shoulder blade
160	↓	bch	B : (nods)
161	)	K1	S : and I had a tracheotomy on me
162	)	K1	S : that's a tube that goes in here (shows neck) so I could breathe
163	)	K1	S : and I had a gastrostomy in my stomach so I could eat
164	)	K1	S : I was in a coma for for three and a half months and then
165	└	K2f	B : mm
166	┌	K1	S : I was critically injured
167	└	K2f	B : mm
168		K2-Fg	B : So its what um you know you didn't um
169	┌	K1	S : I just go through the details quickly
170	)	K1	S : if I keep going through the details the details are boring anyhow but I'm surprised I can still remember them
171	└	K2f	A : Yeah
172		K2f	B : Yeah (laughs)

In this text S1 was able to share information with the school students without having his contributions checked or questioned. This information was given appropriately and with confidence. The reason *why* S1 is able to do is because of the context of situation (i.e., the field, tenor and mode) and *how* he did this was explored in this thesis across three levels. The way in which S1's interaction with the police officer is different to that with the students can be described with reference to Figure 10.1. This shows the interdependent relationship between the different stratal levels of language. The three levels addressed in this thesis were genre (using generic structure potential analysis), discourse semantics (using exchange structure analysis) and lexicogrammar (using the analysis of politeness markers). Applying S1's student interaction to this model shows the interaction was an expert interview (the genre) which was realised by S1 being primarily an information giver (discourse semantics), with fewer politeness markers being produced (the lexicogrammar) than he did in an information requesting role (Figure 10.1). S1's interaction with the police officer (Chapter 1) was a service encounter (the genre), where S1 was in an information requesting role (discourse semantics), which was realised by an increased use of politeness markers at the level of the lexicogrammar (Figure 10.2).

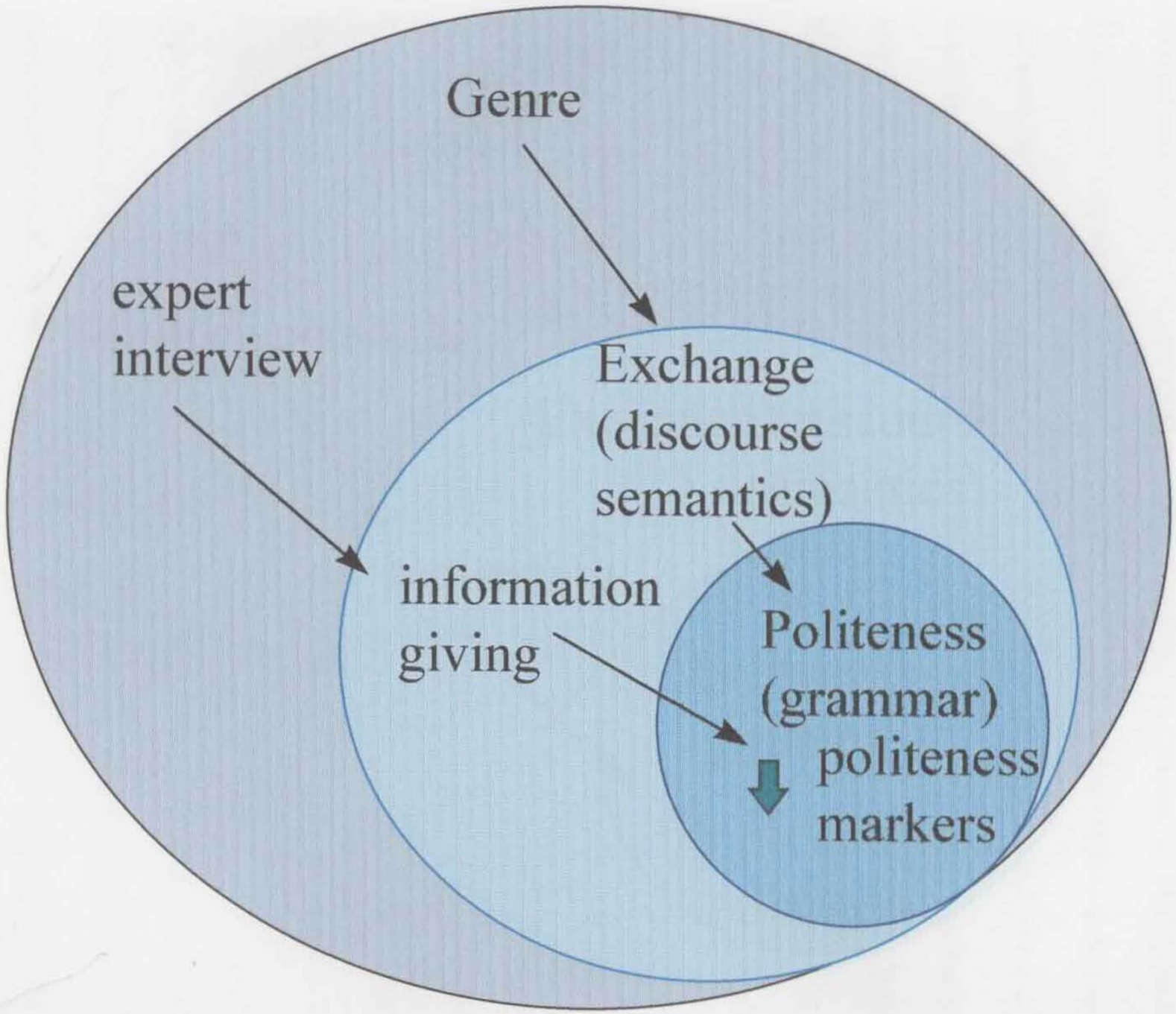


Figure 10.1 Stratal levels of the expert interview

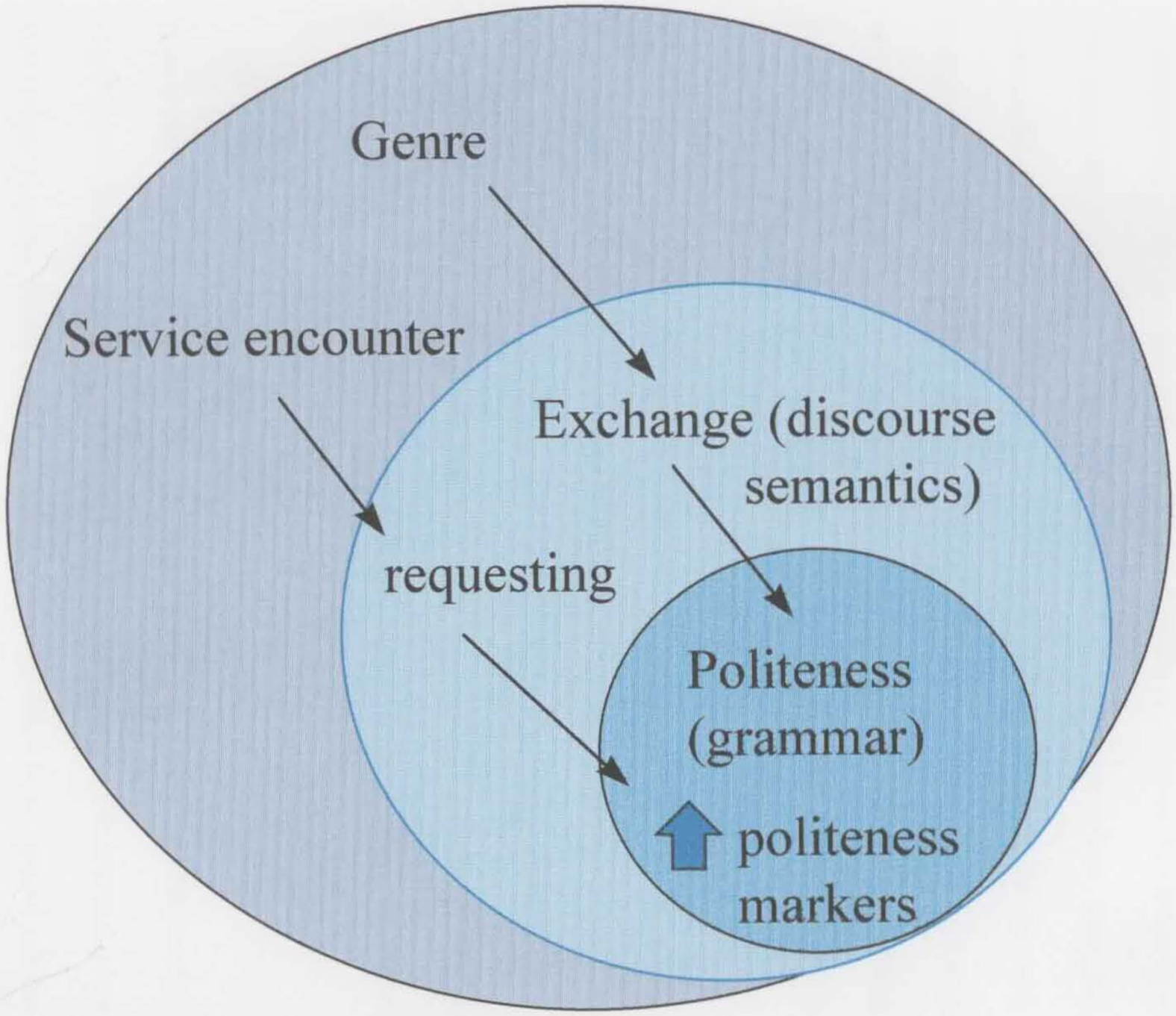


Figure 10.2 Stratal levels of the service encounter

The genre and speaker characteristics (such as familiarity, status, power imbalance) are powerful determinants of the language options which are available to interactants. In the case of the police interaction in Chapter 1, S1 was in a less powerful position as a result of the status of the police officer, and also because he was in an information requesting role. The power imbalance was compounded because he was also brain-injured. As a result S1 was more likely to be asked questions regarding the accuracy of his information giving and less likely to have his contributions followed up. In the student interaction, S1's expert role gave him control over the information giving therefore allowing him the opportunity to exercise language choices not available with the police officer. Contrasting these two interactions highlights the effect of varied tenor and speaker role on the language produced by both the person with TBI and their communication partner. Information requests to a person of authority limits the discourse choices, whereas information giving in a position of authority broadens them.

This is not discounting the fact that TBI subjects in this study were different to controls in the way they interacted in different situations. TBI subjects were more likely to produce incomplete, inappropriate, repeated or unrelated generic structure elements exchange structure moves, and a paucity of politeness markers

when compared with controls in information requesting interactions, particularly in the police, mother and therapist conditions. However, in an information giving role, (with the school students), the effects of these problems were diminished because of the way the person with TBI was positioned in the interaction. TBI subjects also demonstrated that they were able to change from an information giving role with the students to an information requesting role with the researcher. This flexibility has not been previously reported.

The results of this thesis have two important implications. The first is the importance of taking the complexity of interaction into account, and the second is the importance of the communication partner's contribution to TBI discourse.

10.1 The complexity of interaction

Some of the previous difficulty reported in measuring TBI interactions (e.g., Coelho et al., 1995) may be because all interactions are the result of a complex mix of factors. These factors are described in the theory of SFL using the notion of stratal levels (such as genre, exchange, lexicogrammar), the context of situation (field, tenor and mode) and by describing the different functions of language (interpersonal, ideational and textual). It is possible to contrast S1's police service encounter with his interaction with students using SFL because these

factors can be controlled and measured.

The complexity of SFL allowed for a thorough examination of three stratal levels in this thesis using three analyses of the interpersonal metafunction (generic structure potential, exchange structure and politeness markers). These are not the only analyses available, however, as there is great scope for other aspects of SFL being used to examine TBI discourse. The analysis of tone (see Figure 1.1) would be of interest in TBI interactions given TBI subjects' reported difficulty with prosody (Milton et al., 1984). TBI subjects may, for example, vary their use of the tone system (e.g., rising intonation, falling intonation) according to different genres or in particular tenor relationships. Cohesion analysis, which is in the realm of the textual metafunction at the stratal level of discourse semantics, is perhaps the most commonly reported SFL analysis with TBI (e.g., Coelho et al., 1995; Hartley & Jensen, 1991, Mentis & Prutting, 1987), however it has not been used in conjunction with other aspects of SFL theory. For example, researchers have used this as an isolated analysis without incorporating the notion of the effects of context (field, tenor or mode) into their research designs. The influence of familiarity and status of the communication partner may have significant effects on the cohesion of the texts which are produced. Recent work on attitudinal lexis (Martin, in press) may illuminate previously

reported findings of elaborate vocabulary and inappropriate word choice in TBI discourse (Perkins et al., 1995; Prigatano et al., 1985). This is a newly developed interpersonal analysis of the evaluative meanings of words. The attitudinal meanings of words used in conversation are examined through categories such as appreciation (speakers' reactions to and evaluations of reality, e.g., "It was lovely/horrible"), affect (speakers' expression of emotional states, both positive and negative, e.g., "I was fed up/bored/exasperated"), judgment (speakers' judgments about the ethics, morality or social values of other people e.g.,"He was dishonest/a bastard/unconvincing") and amplification (the way speakers magnify or minimise the intensity and degree of reality they are negotiating, e.g.,"She was really, incredibly bright", "They just ran and ran and ran")(Eggins & Slade, 1997). The Appraisal systems of the interpersonal metafunction provide insight into how people share their perceptions and feelings about the world and each other in conversation. Such analyses may tap into the poor lexical choices made by some people with TBI which in turn may negatively affect the choices available for their communication partner. Finally, examining the effects of cultural differences (the ideology stratum) on TBI discourse using SFL analyses may also be of interest. For example, miscommunication as a result of intercultural differences such as difficulties with indirectness in discourse (Tannen, 1981), negotiating communication breakdown and recognising

incongruities (Gass & Varonis, 1991) and difficulty with politeness (Clyne, Ball & Neil, 1991; Damico & Damico, 1993) may be exacerbated in TBI interactions, given that these have also been reported following TBI (McDonald, 1992, 1993). Cross-cultural differences could form the basis of an investigation into TBI interactions using the interpersonal analyses of SFL across other stratal levels (e.g., use of politeness markers and exchange structure moves, such as the types of dynamic moves used to negotiate communication breakdown).

10.2 The contribution of the communication partner

While differences were noted between TBI and control interactions in the way interactions were structured, the way information was exchanged and the wording which was used, the communication partner contributed to the typical perception of disordered communication following TBI. Obviously, some of the differences between TBI and control interactions were the result of the patient's communication impairments. However, the role of different communication partners has been powerfully demonstrated to influence the final jointly produced text. The complexity of tenor and its effect on TBI interactions has not been previously explored. Taking the tenor variables of familiarity and status of participants into account is crucial in the examination of all research which examines interactions. It is of particular interest when one of the interactants

has a communication impairment. Goffman (1963) reported that handicapped people arouse anxiety and discomfort in others and are socially stigmatised. Studies by social psychologists have viewed disability as an independent variable which predicts the outcome of social interaction. Further, social contexts shape the meaning of a disability in a person's life (Fine & Asch, 1988). The role of the environment and attitudes to disability by members of the public and family members will shape the way social encounters proceed. Fine and Asch (1988) suggested that "If the partners reorganise their roles....such an organisation may result from a variety of factors: the way they think about disability, their relational obligations, and the way that health care professionals inform them about the implications of disability" (p. 14). The results of this research suggest that those who have sustained a head injury and have a visible disability may be compromised in social interactions.

This thesis has also shown that people with TBI are able to interact better in some situations than others. The relationship they have with their communication partner, the genre of the situation and the communicative purpose can be manipulated to enable the person with TBI to access a wider range of linguistic choices than those available in a therapy session with a clinician. This has implications for the assessment and treatment of

communication disorder following TBI.

10.3 Implications for intervention

Implications for intervention are two-fold. Firstly, treatment programmes can be designed to directly train the person with TBI to interact more appropriately according to the genre and context. Training programmes can incorporate these factors at a number of linguistic levels including generic structure, information exchange and the wording used.

Secondly, communication partners can be trained to be aware of the ways they may be interacting differently with the person with TBI. This may, for example, involve being aware of the types of questions they are asking and accepting contributions from the person with TBI without questioning their accuracy. This training could incorporate individual or group programmes which are directed towards family members, health professionals and members of the community.

The notion of effecting change in the communication process is central to speech pathology practice. Using tenets of SFL and critical linguistic theory (Fairclough, 1992) to develop this notion, the concept of democratisation of discourse was raised in Chapter 9. This process aims to remove the inequalities and

asymmetries in the discursive and linguistic rights, obligations and prestige of groups of people. This can be enacted in three ways with the TBI population. The first is access to prestigious discourse types for speakers with TBI. At the most simple level this involves access to the primary knower (K1) role, but has implications for advocacy for people with TBI in the rehabilitation process and in their reintegration into the community. Being involved in the hiring of staff in brain injury rehabilitation programmes, speaking on their own behalf at community education sessions, having a role in the operation of transitional living units are some examples. A second way to promote democratisation is through the elimination of overt markers of hierarchy and power asymmetry in institutional discourse where power relations are unequal. The way therapists interact with their TBI patients could be altered to take account of this. For example, taking less control over turn taking, giving the client the right to determine topics, reducing the use of specialised vocabulary, reducing the number of teaching exchanges, asking real questions, reducing checking behaviour and following up comments by the person with TBI are all positive ways of reducing overt asymmetries in the therapist interaction. This is closely associated with a third way of eliminating power asymmetry, which is to have a tendency towards informality. The goal of treatment is to assist the patient to achieve autonomy and choice so that they will be a "self steering" individual who

can participate in a range of institutional and local discourse domains (Fairclough, 1992, p.220). Variation across these discourses means that the clinician needs to be aware of the range of institutions and domains the person with TBI interacts with. Therapy can address this diversity through the following processes: 1) increasing the variability of discursive practice (for example, the speech pathology interview being conducted in more varied ways), 2) less predictability for participants in any given discursive event, with a constant need to negotiate (such as giving clients challenging communicative situations) and 3) greater permeability of discourse types emanating from outside (such as introducing service encounters into the clinic room using the telephone). Using democratised forms of discourse (eliminating overt asymmetries in terms of address, being informal) is a way of breaking down the distinctions and barriers between standard therapeutic discourse and other discourse varieties in the person with TBI's everyday life. The discourses which the person with TBI are faced with are complex, heterogenous and often contradictory and are therefore a significant challenge for the speech-language pathologist who is assisting in the process of regaining autonomy and choice. With the use of analyses of SFL and awareness of the power imbalance in interactions, the speech-language pathologist has some tools with which to face this challenge.

From the three major questions posed in Chapter 1, a detailed study of TBI interactions has led to suggestions for assessment and treatment of the interactional problems which have been reported to follow TBI. The notion of empowering people with TBI to assume new social roles through varied discursive practices has training implications not only for the people with TBI, but also, significantly, for their communication partners. Future studies are planned to evaluate training programmes for communication partners. Given the small subject numbers in this thesis, it is also recommended that future studies be undertaken to replicate results with larger numbers. The findings of this thesis are none-the-less exciting as they have provided valuable insights into the nature of interactional impairments following TBI which have not been previously addressed.

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Appendix 12.1 Procedures for Generic Structure Potential, Exchange Structure and Politeness Markers (Mood and modality) analysis

12.1.1 Generic Structure Potential Analysis Study 1

The elements which are scored in GSP analysis appear in Table 11.1. Hasan (1985) developed a formula whereby these elements may be recurring and optional. This allows for analysis of the dynamic nature of spontaneous interactions. Hasan's (1985) analysis has been adapted to account for a service encounter where *information* (rather than goods) is being exchanged so that :

[<GREETING> •(SERVICE INITIATION)∧] [(SERVICE ENQUIRY ←•)
{SERVICE REQUEST ∧ SERVICE COMPLIANCE }] ∧ CLOSING ∧
GOODBYE.

( ) = OPTIONALITY
[ ] = LIMITATION FOR MOBILITY
• = A MOBILE ELEMENT
← = RECURSIVENESS (Hasan, 1985/ Martin, 1992)
{ } = HOMOGENOUS RECURSION (Hasan)
∧ = FIXED SEQUENCE

For example, in the first bracket, the Greeting (GR) is obligatory, but may be preceded by a Service Initiation (SI) (e.g. "Can I help you?). The square brackets indicate that this sequence must precede the service enquiry. (G) and (SI) cannot follow the elements to the right of (SI). The carets (∧) indicate the sequence of structural elements. The dot and arrow next to Service Enquiry (SE) indicate a) that SE is optional; b) SE can occur anywhere, as long as it does not precede G or SI, or follow Close (CL) or Goodbye (GB). The braces {} indicate that the degree of repetition (or iteration/recursion as termed by Hasan, 1985) for elements within the braces is equal. For example if SR occurs twice, then SC must occur twice.

Thus, once the data has been marked for individual elements, the structure of that interaction can be described by placing the elements in the sequence in which they appear. The number and order of structural elements can then be evaluated according to the field and tenor configuration of that interaction.

Table 12.1.1 GSP elements in Study 1

Element	Description
GREETING (GR)	Caller and information service provider greet each other
ADDRESS (AD)	Caller and information service provider identify selves or ask for identification e.g. "What's your name?"
SERVICE INITIATION (SI)	"Can I help you?"
SERVICE REQUEST (SR)	Makes primary request for information known to service provider
SERVICE ENQUIRY (SE)	Seeks or provides further information or detail regarding initial SR. Can be made by either party
SERVICE COMPLIANCE (SC)	Response to request for information and invitation for further requests
CLOSE (CL)	Closing remarks - usually interpersonally oriented e.g. "See you later" "Have a good day"
GOODBYE (GB)	Final goodbye "Bye - Bye"

Other elements

Element	Description
INCOMPLETE/ INAPPROPRIATE (*)	Inappropriate or incomplete elements either because of delayed responding or a lack of response
CALL FOR ATTENTION (CALL)	Call for attention from either speaker, either due to lack of response, or because speaker was returning to the phone after suspending conversation
UNRELATED (UNR)	Comments or enquiries which are unrelated to the task at hand
ACTION (ACT)	Statements of action (e.g. I'll just write that down" "Hang on for a minute")
PERSONAL COMMENT (PERSONAL)	Comments of a personal nature which, while not directly relevant to the information seeking task, appear to fulfil an interpersonal function (e.g. "You're not nervous about driving are you?" ; "You'll be alright")
REPETITION (rpt)	Elements which are repeated due to misunderstanding ; failure to take in information or forgetting of information

12.1.2 Generic Structure Potential Analysis Study 2

The elements scored for the GSP of structured interview interactions are as follows.

GREETING (GR)
Interpersonal "opening move"
Short vs Extended (Hi vs How are you)
May be timebound (e.g., good morning)
May depend on social distance (e.g. How do you do)

ADDRESS (Ad)
* Defines the addressee (e.g. Hello Mary)
* Indication of role relationship (Mr, Dr vs 1st name)
* Rarely used between strangers but strangers may use identification (Id) (e.g., My name is.....)

APPROACH (Ap)
*Assists in establishing a comfortable relationship with others
* Means of getting the conversation going
* Realised by "safe topics" social niceties, breaking the ice, small talk
* Can distinguish between two types: Direct and Indirect
* Approaches keep the communication channel open for further development in a conversation and are a very good indication of the kind of verbal involvement the interactants are prepared to engage in.

APPROACH-DIRECT (Ap-D)
* Usually realised by topics which concern the interactants themselves e.g. health, appearance, new clothing, family etc.
* Many direct approaches are stereotypic (e.g., How's life?)
* Discusses topics in depth which are not directly related to the purpose of the interaction (e.g., the Melbourne Cup, Cricket, footy teams etc.)

APPROACH - INDIRECT (Ap - I)
* Refers to the immediate situation of the weather, the current news
* Approaches function as a bridge to conversation, in our case a bridge to the business of asking for specific information as requested

CENTRING (C)
* Realised by cognitive and informative topics
* The questions and answers which directly relate to the purpose of the

interactions (i.e. finding out the details and impact of the injury; giving details about the project)
* May be realised by topics which describe life before the injury (to enable a comparison), current activities (such as wheelchair basketball, going to TAFE etc.) which provide an indication of how the person is functioning now.

LEAVE TAKING (LT)
* The expression of an interactant's desire or need to terminate the conversation e.g., Well I've got to be going now; Nice talking to you

GOODBYE (GB)
* Can be short (Bye) or extended (see you later)
* Extended GB functions as a bridge to stay in contact

Ventola (1979) developed a formula whereby these elements may be recurring and optional. This allows for analysis of the dynamic nature of spontaneous interactions. Ventola's (1979) analysis has been adapted to take into account the fact that our interactions swere not casual conversations but were a structured conversations with a pre-determined purpose so that:

$$[G^{\wedge} (\bullet Ad)^{\wedge} (\bullet Id)^{\wedge}] \{ [Ap\text{-}I^{\wedge} Ap\text{-}D^{\wedge} C^{\wedge} (\bullet Id)^{\wedge}] LT\}^{\wedge} GB$$

( ) = OPTIONALITY
[ ] = LIMITATION FOR MOBILITY
• = A MOBILE ELEMENT
← = RECURSIVENESS (Hasan, 1985/ Martin, 1992)
{ } = HOMOGENOUS RECURSION (Hasan)
∧ = FIXED SEQUENCE

(G) = GREETING
(Ad) = ADDRESS
(Id) = IDENTIFICATION
(Ap-I) = APPROACH - INDIRECT
(Ap-D) = APPROACH - DIRECT
(C) = CENTERING
(LT) = LEAVE TAKING
(GB) = GOODBYE

Notes

In a "non-minimal" conversation (i.e., a conversation where the primary focus of attention is the exchange of information to an extent where a greater degree of involvement is established in the various components of information being exchanged) which partly describes the interaction we are studying, none of the elements may occur by itself. There must always be a Centring element plus some other elements.

(NB: A minimal conversation is a form of phatic communion and have the function of establishing and maintaining social relationships).

The Greeting must precede the Address but the Address may follow Identification (Id). The square brackets around these three components indicate that they are limited to occur prior to the next bracketed set of structural elements.

For example, in the first bracket, the Greeting (GR) is obligatory, but may be followed by an Address (Ad), (e.g., Hello John) and/or an Identification (My name is .....). Identification is recursive in non-minimal conversations as people often forget each other's names, although they have already introduced themselves (or have been introduced) previously during the interaction. The square brackets indicate that this sequence must precede the Centring (C). (GR), (Ad) and (Id) cannot follow the elements to the right of (C). The optional elements are within parentheses. The carets (∧) indicate the sequence of structural elements. The dot and arrow above(Ap-I) and (Ap-D) indicate that these can occur anywhere, as long as they do not precede (GR), (Id) or (Ad), or follow Goodbye (GB). Following the opening Greeting and/or Identification and Address elements there must be at least one Direct or Indirect Approach and at least one episode of Centering for the purpose of the interactions to be fulfilled. Centring (C) may be recursive although it is often more difficult for strangers as common topics are rarer. The braces {} indicate the area of mobility for recursion. Leave Taking may be also be recursive (e.g. after taking leave we often get involved in a new C or a previous one). Naturally after the recursion of (C) we usually also have a recursion of Leave Taking because Leave Taking is a terminating element of the whole encounter. (GB) is at the end of the chain and is not recursive.

Overlapping (graphically represented as ∩ occurs when Topic A gradually changes into Topic B.

Topically dissimilar elements are distinguished by placing $\alpha\ \beta\ \gamma\ \delta\ \epsilon$ etc (e.g., Ap-D_α + Ap-D_β + Ap-I_α + Ap-I_β)

Topic similarity is represented by use of arabic numbers after Greek letters (e.g., $Ap\text{-}D_{\alpha 1}$ + $Ap\text{-}D_{\alpha 2}$ + $Ap\text{-}I_{\alpha 1}$ + $Ap\text{-}I_{\alpha 2}$)
Thus, once the data has been marked for individual elements, the structure of that interaction can be described by placing the elements in the sequence in which they appear. The number and order of structural elements can then be evaluated according to the field and tenor configuration of that interaction.

12.1.3 Exchange Structure Analysis

Exchange structure is made up of two types of moves. These include **synoptic** moves which serve to request and provide information and **dynamic** moves which serve to keep the interaction going so that this exchange of information can occur. Exchanges involved the exchange of either **information** (i.e. knowledge) or **action.**

When involved in an exchange you can be either a **primary knower** or **secondary knower.**

1 = Primary knower : is the one who has the information

2 = Secondary knower : is the one who is receiving the information. They may be either requesting the information or simply receiving it.

Simple knowledge exchanges

K2 : What time is it?

K1 : It's about five o' clock.

K2 : Why are we going to the hospital?

K1 : Because you have an appointment with the physio.

Simple action exchanges

A2 : Can I have a drink please?

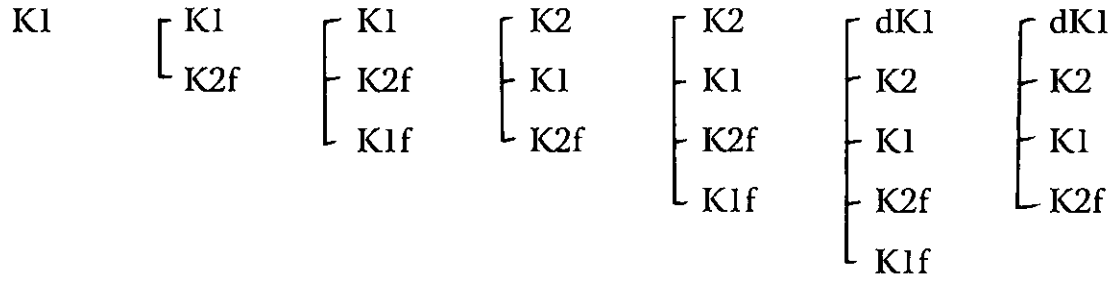
A1 : There you go

A2 : Can you move the TV for me?

A1 (NV) Moves TV

Synoptic moves

There are a range of synoptic moves which can only occur in certain sequences. These sequences are as follows :



Key to synoptic moves in knowledge exchanges

K1 = primary knower (person who has the information)
K2 = secondary knower (person receiving the information)
K1f = follow up move by K1 (e.g. Oh, O.K., Yeah)
K2f = follow up move by K2
dK1 = teaching/cuing move where K1 asks a question which they already know the answer to and delay (hence the "d") the K1 response, which acknowledges the correctness of the other speaker

Table 12.1.2 Examples of exchange types in information exchanges

Types of Moves	Examples
Information requesting exchange	
K2 = secondary knower, who does not have the information K1 = primary knower, who already knows the information K2f = a follow up move by the secondary knower to finish the exchange	K2 How do I get my license back? K1 You go to the registry K2f Oh
The teaching exchange	
dK1 = primary knower asking a question to which they know the answer	dK1 Where did we go? K2 To the beach K1 That's right!
Information seeking exchange	
cfrq = dynamic move which asks for confirmation rcfrq = response to confirmation	K2 Do you know where the registry is? cfrq Where? rcfrq The registry K1 Yeah it's at Rosebery
Information giving exchange	
bch = backchannelling move	K1 I'm here with Leanne at the moment bch Ah ha K1 at Lidcombe K2f OK

Table 12.1.3 Examples of exchange types in action exchanges

Types of Moves	Examples
Action requesting exchange	
A2 = secondary actor, who isn't carrying out the action A1 = primary actor, who is going to carry out the action A2f = a follow up move by the secondary actor to finish the exchange	A2 Can you take me to the registry? A1OK Let's Go A2f OK
The offer of action	
dA1 = preliminary offer of action	dA1Can I get you a beer? A2 Yes thanks A1 Here you go
Action exchange	
bch = backchannelling move	A1 We're going home now bch Ah ha A1 to Lidcombe A2f OK

Dynamic moves

Dynamic moves are used to facilitate the negotiation of meaning, either through the use of active means (such as clarification or checking), or by giving feedback that the information has been conveyed successfully (by confirmation or backchannelling).

Table 12.1.4 Dynamic moves

Type of dynamic move	Code
Tracking moves	
forward channel	fch
backchannel	bch
replay request	rprq
response to replay request	rrprq
confirmation request	cfrq
response to confirmation request	rcfrq
clarification request	clrq
response to clarification request	rclrq
confirmation	cf
clarification	clar
check	check
self correct	sc
collocational prompt	cp
response to check	rcheck
Challenging moves	
challenge	chall
response to challenge	rchall
justification	jst

Definitions of dynamic moves

Backchannel : bch
Function to indicate that the addressee is tracking what the speaker is saying. Backchannels are often paralinguistic or non verbal (e.g., laughter). Usually realised by "mm" or "ahah". Important in telephone interactions.
e.g., A : K1↓ He's really selfish
B : bch Mm

Confirmation request/Response to confirmation request : cfrq/rcfrq
Tracking moves which suspend the exchange. They are questions (with rising intonation) from the addressee, asking whether the message has been correctly understood.
e.g., A : ⌜K2 What do you get from your parents?
B : ⌞K1↓ Nothing
A : cfrq↓ Nothing?
B : rcfrq↓ Nothing.

Clarification request/Response to clarification request : clrq/rclrq
Tracking moves which suspend the exchange. Different to confirmation requests because they refer to a particular part of the message rather than the utterance as a whole, and demand elucidation or elaboration of what has been said.
e.g., A : K2↓ Would you be able to tell me so I could write them down please?
B : clrq↓ Alright what these are your goals for... the social skills group?
A : rclrq The social skills yes
A : K1 Right your first goal was not making jokes

Confirmation statements
Tracking moves where the listener repeats part of the message without rising intonation or need of response.
e.g., A : K1↓ Your first goal
B : cf↓ My first goal
A : K1↓ was not about making jokes
B : cf↓ Ah not making jokes

Replay request/ response to replay request
These occur when the meaning has been completely missed, using items such as *what, pardon, huh, sorry, eh, I beg your pardon etc.*

e.g.,	A :	K1 ↓	I came by train
	B :	rprq ↓	What?
	A :	rrprq	I came by train
	B :	K2f	Oh right.

Challenge/Response to challenge

These threaten the progress of the discourse and may terminate the exchange altogether. A challenge is typically introduced by the participant who does not initiate the exchange. It can challenge the experiential content of what has been said or the authority of the speaker to say it, or the relevance of the utterance to the listener. A challenge may be followed by a justification or a response to challenge.

e.g.,	A :	K1 ↓	I reckon it's on tomorrow
	B :	chall ↓	Are you sure?
	A :	rchall	Well it could be
	B :	K2f	I guess so.

S5 : Therapist condition - Study 1

49	K1 ↓	T : But to be able to to buy the exact items on your list, by yourself
50	chall ↓	S : Well that's all done isn't it?
51	rchall	T : Yeah

Justification

Gives a reason for a challenge (e.g. disinclination or disability), or they may be used by a speaker who predicts a potential challenge and jumps in before the speaker has time to make it.

e.g., S5: Therapist condition - Study 1

64	K1	T : yeah cause you tend to go off and buy scratchies
65	K2f	S : Yeah
66	K1 ↓	T : generally OK
67	jst ↓	S : I'm not used to being with a group like this

68	**rjst** ↓	T : Mm I know it can be difficult, but [I think that

Check/Response to check (check/rcheck)
Tracking moves which suspend the exchange and which are available only to the speaker. They normally occur when the person is performing the primary knower's move and is making sure that a piece of information is coming across, or that the addressee has sufficient background knowledge to understand what they are saying. A check is normally on a rising tone, and expects a response from the addressee.

e.g., A : K1 ↓ But if you go through the Commonwealth Rehab Service
A : check ↗ Right?
B : rcheck ↓ Yeah

Some other examples of dynamic moves:

Example 12.1 TBI subject S1 Police condition - Study 1

15	⌐	K2	P : What's your name?
16	⌙	K1 ↓	S : R.C.
17		**cfrq** ↓	P : R.C. is it?
18		**rcfrq** ↓	S : Yeah
19	⌙	K2f	P : Right

Example 12.2 TBI subject S3 Bus timetable condition - Study 1

5	⌐	K2	B : Where are you going?
6	⌙	K1 ↓	S : Strathfield station
7	⌐	cfrq ↓	B : Chatswood?
8	⌙	rcfrq ↓	S : No from Strathfield
9	⌐	cf ↓	B : [Strathfield mm
10	⌙	K1	S : to the Macquarie Centre
11	⌙	K2f	B : oo(glottal fry) um...

12.1.4 Mood and modality analysis (from Halliday, 1985)

MOOD: made up of Subject and Finite
Subject: any nominal group
Finite: a small number of verbal operators expressing either
1) **tense** (i.e., past present or future from the time of talking) OR
2) **modality** (i.e., the speaker's judgement of the probabilities or obligations involved in what is being said).

The Finite element makes the proposition finite or circumscribes it: it brings the proposition down to earth so that it is something that can be argued about. It relates the proposition to its context in the speech event. Finiteness is thus expressed by a means of a verbal operator which is either temporal or modal.

Finite verbal operators

TEMPORAL OPERATORS

Past	Present	Future
did, was had, used to	does, is has	will, shall would, should

MODAL OPERATORS

Low	Median	High
can, may could, might	will, would, should is to, was to	must, ought to, need, has to, had to

The analysis in this thesis reflects modal operators only.

MODAL ADJUNCTS

Modal adjuncts are those lexical items which express the speaker's judgement regarding the relevance of the message. They often come at the beginning of the clause.

Table 12.4 Modal adjuncts (Halliday, 1985)

	Type	Meaning	Examples
I	probability	how likely? how obvious?	probably, possibly, certainly, perhaps, maybe, of course, surely, obviously
	usuality	how often? how typical?	usually, sometimes, always, never, for the most part, seldom, often
	opinion	I think	in my opinion, from my point of view, personally, to my mind
II	admissive	I admit	frankly, to be honest, to tell you the truth
	assertive	I assure you	honestly, really, believe me, seriously, without any doubt
	presumptive	how presumable?	evidently, apparently, no doubt, presumably
	desiderative	how desirable?	(un)fortunately, to my delight, luckily, regrettable, hopefully
	tentative	how constant?	initially, tentatively, looking back on it, provisionally
	validative	how valid?	broadly speaking, in general terms, on the whole, objectively, strictly speaking
	evaluative	how sensible?	wisely, understandably, foolishly, by mistake
	predictive	how expected?	to my surprise, as expected, amazingly, by chance

Modal adjuncts fall into two groups

1) MOOD ADJUNCTS (GROUP I IN TABLE 12.4)

These relate specifically to the meaning of the finite verbal operators expressing probability, usuality, obligation, inclination or time. They therefore typically occur next to the Finite, either before or after it. e.g.,

she probably hasn't arrived yet
he doesn't always hear
you certainly must go
I'd gladly help
she's already arrived

There is also another group expressing intensity. e.g., just, simply
e.g., you simply can't tell

Wherever they turn up they form part of the Mood element.
The principle items functioning as Mood Adjunct include the following :

(a) probability/ obligation	certainly, surely,probably, perhaps, maybe, possibly, definitely, positively
(b) usuality	always, often, usually, regularly, typically, occasionally, seldom, rarely, never, once, ever
(c) presumption	evidently, apparently, presumably, clearly, no doubt, obviously, of course
(d) inclination	gladly, willingly, readily
(e) time	yet, still, already, once, soon, just
(f) degree	quite, almost, nearly totally, entirely, utterly, completely, literally, absolutely, scarcely, hardly
(g) intensity	just, simply, ever, only, really, actually

Those in (a) - (c) are typically thematic in the clause and hence were listed in Table 11.4. Those in (d) - (g) are not usually thematic and so did not figure in that table.

COMMENT ADJUNCTS (Group II in Table 12.4)

Comment adjuncts tend to occur thematically, finally, between Theme and Rheme, or between Mood and Residue, and when medial, they are typically associated with a boundary between information units.

Although they are interpersonal rather than textual in function, expressing the speaker's comment on what he is saying, they are not of themselves part of the proposition, and therefore fall outside the Mood-Residue structure.

e.g. Unfortunately, however, he can't usually hear clearly on the telephone

comment adjunct	conjunct adjunct	S	F	mood pred adjunct	adjunct	adjunct

The categories classified in the transcripts were:

1. Yes/No interrogatives
2. Yes/No tag questions
3. Wh interrogatives
4. Marked Wh interrogatives

e.g., Could you tell me what bus I'd have to catch?
Can you tell me how much the cost is please?

5. Finite modal verbs
6. Modal adjuncts
7. Comment adjuncts

12.1.5 Transcription conventions

All data were transcribed using conventions drawn from Ochs (1979) and Psathas & Anderson (1990). All transcripts were divided according to moves. A move is defined as a semantic unit of information which is the smallest unit of potentially negotiable information presented by one speaker within one turn of interactive talk (Eggins, 1990).

All transcripts were marked with the following notation:

1. Participants
2. Speaker condition
3. Length of transcript (in minutes)

Margin notes

1. Move number
2. Speaker identification

Notation

X	Unintelligible syllable, therefore XX indicates an unintelligible two syllable utterance
[	Indicates overlapping talk where it occurs in the transcript
?	If placed before a word, this indicates that there is some doubt regarding the target word (e.g., ?road). If placed at the end of an utterance, this indicates rising intonation or grammar associated with a question
.	Indicates a pause of one beat
..	Indicates a pause of two beats
( )	Information in parentheses is that information which is apparent to participants but not evident in the written text. This included laughter, physical touching, manipulation of the immediate environment (such as turning off the audio tape). For example, laughing and looking away were denoted (laughs) (looks away).

Appendix 12.2
The Scales of Cognitive Ability for Traumatic Brain Injury (SCATBI) (Adamovich & Henderson, 1992)

The SCATBI consists of five subtests which are designed to measure cognitive/linguistic processes which may be affected following a traumatic brain injury. The subtests or scales include Perception and Discrimination, Orientation, Organization, Recall and Reasoning. All TBI subjects in the second study were administered this test to provide a basic description of their cognitive-communicative abilities to enhance subject description. Results on each scale are expressed using a standard score (mean of 100 and standard deviation of 15).

Each scale is composed of subtests as follows:

PERCEPTION AND DISCRIMINATION

1. Sound recognition
2. Shape recognition
3. Word recognition (no distraction)
4. Word recognition (with distraction)
5. Colour discrimination
6. Shape discrimination
7. Size discrimination
8. Discrmination of colour, shape and size
9. Discrimination of pictured objects
10. Auditory discrimination (real words)
11. Auditory discrimination (nonsense words)

ORIENTATION

1. Premorbid questions
2. Postmorbid questions

ORGANIZATION

1. Identifying pictured categories
2. Identifying pictured category members
3. Word associations (word categories)
4. Sequencing objects (size)
5. Sequencing words (alphabetical)
6. Sequencing events (time of year)
7. Sequencing events (pictured task steps)
8. Sequencing events (recall task steps)

RECALL

1. Memory for graphic elements
2. Naming pictures
3. Immediate recall of word strings
4. Delayed recall of word strings
5. Cued recall of words
6. Cued recall of words in discourse
7. Word generation
8. Immediate recall of oral directions
9. Recall of oral paragraphs

REASONING

1. Figural reasoning: matrix analogies
2. Convergent thinking: central theme
3. Deductive reasoning: elimination
4. Inductive reasoning: opposites
5. Inductive reasoning: analogies
6. Divergent thinking: homographs
7. Divergent thinking: idioms
8. Divergent thinking: proverbs
9. Divergent thinking: verbal absurdities
10. Multiprocess reasoning: task insight
11. Multiprocess reasoning: Analysis

Appendix 12.3 Research project information and consent forms

12.3.1 Information given to TBI and Control subjects - Telephone interaction study

The following information was provided to subjects on The University of Sydney letterhead.
A research project is being conducted by the speech pathologist in the Lidcombe Hospital Head Injury Unit and The Faculty of Health Sciences, The University of Sydney.
After a head injury patients often need speech therapy to improve their communication. To improve the type of treatment we give to these patients we would like you to participate in our study. The aims of the study are to
(I) To improve our knowledge of the way patients with a head injury communicate
(ii) To develop treatment ideas.

If I say "yes" what will happen?

You will be asked to make four telephone calls from the speech pathology clinic room. This should take about half an hour. You will be asked to call four different people. These conversations will be recorded. You should only have to visit once.

If I say "no" what will happen?

There is no problem if you say "no". You will not be treated any differently in your treatment programme. If you decide to participate you are free to withdraw at any time. If you do withdraw from the study there will be no effect on any future treatment or your relationship with any person or service in the South Western Sydney Area Health Service.

What about my privacy?

Your name and address will be known to the researchers, however this information will be kept separate from the data. It will not be possible to identify you as the forms and tapes used will be filled out using numbers, rather than your name.

Are there any risks for me?

No. There are no risks of any sort to the participants in this project.

What do I get out of it?

You will be making a valuable contribution to Speech Pathology research and eventually improved treatment methods for people who have a head injury.

How can I get more information?

The main researcher at Lidcombe Hospital is Leanne Togher, Speech Pathologist in the Head Injury Unit. Her office is adjacent to the physiotherapy gym in Ward 32. Her phone number is 646-8565. The other researchers are Linda Hand and Chris Sheard, Lecturers, School of Communication Disorders, Faculty of Health Sciences, The University of Sydney. They can be contacted on 646-6450.

What now?

After you have finished reading this sheet and the Consent Form, tell Leanne whether you would like to participate or not, or if you would like any further information
Thank You.

12.3.2 Information given to TBI and Spinal injury subjects - Community Education Study

The following information was provided to subjects on The University of Sydney letterhead.
A research project is being conducted by one of the speech pathologists from the Liverpool Hospital Brain Injury Unit and The Faculty of Health Sciences, The University of Sydney. This research is examining the way people who have had a head injury communicate in different situations. One of the situations we would like to study is interactions with students who have been exposed to community education about road safety.

After a head injury, people often need speech therapy to improve their communication. This study is aiming to improve the treatment options we have available. We would like you to participate in our study. The aims of the study are to
(i) to improve our knowledge of the way patients with a head injury communicate
(ii) to develop treatment ideas.

If I say "yes" what will happen?

You will be asked to speak for 10-15 minutes to two students and to the researcher. This question time will be audio and video taped.

If I say "no" what will happen?

There is no problem if you say "no". If you decide to participate you are free to withdraw at any time. If you do withdraw from the study there will be no effect on any future treatment or you relationship with any person or service in the South Western Sydney Area Health Service.

What about my privacy?

Your name and address will be known to the researchers , but we will keep this information separate from the data. It will not be possible to identify you as the forms and tapes used will be filled out using numbers, rather than your name.

Are there any risks for me?

No. There are no risks of any sort to the participants in this project.

What do I get out of it?

You will be making a valuable contribution to Speech Pathology research, and will help in improving treatment methods for people who have a head injury.

How can I get more information?

The main researcher is Leanne Togher, Speech Pathologist in the Liverpool Brain Injury Unit and PhD student at The University of Sydney. She can be contacted at the University of Sydney on 9708-5152. The other researchers are Linda Hand and Chris Code, Lecturers, School of Communication Disorders, Faculty of Health Sciences, The University of Sydney. They can be contacted on 9351-9450.

What Now?

After you have finished reading this sheet and the Consent Form, you can contact Leanne if you would like any further information.

12.3.3 Information given to school students - Study 2

The following information was provided to subjects on The University of Sydney letterhead.
A research project is being conducted by one of the speech pathologists from the Liverpool Hospital Brain Injury Unit and The Faculty of Health Sciences, The University of Sydney. This research is examining the way people who have had a head injury communicate in different situations. One of the situations we would like to study is during talks to students and community organisations about the experience of being disabled.
After a head injury, people often need speech therapy to improve their communication. This study is aiming to improve the treatment options we have available. We would like you to participate in our study. The aims of the study are to
(i) to improve our knowledge of the way patients with a head injury communicate
(ii) to develop treatment ideas.

If I say "yes" what will happen?

At the end of your education session, organised through the Student Community Involvement Program (SCIP), there will be a 10 -15 minute time for questions. This question time will be audio and video taped.

If I say "no" what will happen?

There is no problem if you say "no". If you decide to participate you are free to withdraw at any time. If you do withdraw from the study there will be no effect on any future treatment or you relationship with any person or service in the South Western Sydney Area Health Service.

What about my privacy?

Your name and address will be known to the researchers , but we will keep this information separate from the data. It will not be possible to identify you as the forms and tapes used will be filled out using numbers, rather than your name.

Are there any risks for me?

No. There are no risks of any sort to the participants in this project.

What do I get out of it?

You will be making a valuable contribution to Speech Pathology research, and will help in improving treatment methods for people who have a head injury.

How can I get more information?

The main researcher is Leanne Togher, Speech Pathologist in the Liverpool Brain Injury Unit and PhD student at The University of Sydney. She can be contacted at the University of Sydney on 646 - 6450. The other researchers are Linda Hand and Chris Code, Lecturers, School of Communication Disorders, Faculty of Health Sciences, The University of Sydney. They can be contacted on 646-6450.

What Now?

After you have finished reading this sheet and the Consent Form, you can contact Leanne if you would like any further information. Otherwise return the signed consent form prior to _____.

12.3.4 Consent form for subjects

The following information was provided to subjects on The University of Sydney letterhead.

Principal Researchers
Leanne Togher, Senior Speech Pathologist, Liverpool Hospital
and PhD Candidate, The University of Sydney.
Linda Hand, The University of Sydney
Professor Chris Code, The University of Sydney

Communication skills in persons with closed head injury during community education interactions
CONSENT FORM FOR SUBJECTS

I _____ have read and understood the Information Sheet and this Consent Form. I understand that I will be speaking for 10 - 15 minutes during a community education session. During this time they will be audio and video taped. This information will remain strictly confidential. I consent to this videotape being used for the purposes of this research and for restricted educational purposes.

I understand that my decision whether or not to participate in, or subsequently withdraw from, this study will not affect any current or future treatment or my relationship with the South Western Sydney Area Health Service or any institution co-operating in this study or any person treating me.

I understand the purpose of the study and that I can stop participating at any time. With this understanding, I agree to take part in this research.

NAME :

SIGNATURE: DATE:

WITNESS'S NAME:

WITNESS'S SIGNATURE: DATE:

Appendix 12.4 Generic structure potential results

Table 12.4.1 Generic structure potential realisations for TBI and control subjects for Bus Timetable Condition- Telephone interaction Study 1

Subject	Generic Structure Realisation
S1	GR ^ SR ^ $SE_{(by\ B)}$ ^ SC ^ $SE_{(by\ S)}$ ^ CL ^ GB
S2	GR ^ GR* ^ SR ^ SC ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ SC ^ $SE_{(by\ B)}$ ^ SC ^ $UNR_{(by\ S)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ SC ^ $SE_{(by\ S)}$ ^ $SE_{(by\ B)}$ ^ CL * ^ CL ^ GB.
S3	GR ^ SR * ^ $SE_{(by\ B)}$ ^ SR * ^ SC ^ $CL_{(by\ S)}$ ^ SC ^ ACT ^ CALL ^ SE ^ CL ^ GB
S4	GR ^ GR * ^ SR ^ SC ^ CL ^ GB
S5	GR ^ SR ^ SC ^ $SR_{(rpt)}$ * ^ $SC_{(rpt)}$ ^ $SE_{(by\ S)}$ ^ $SC_{(rpt)}$ * ^ $UNR_{(by\ S)}$ ^ $UNR_{(by\ S)}$ ^ $SE_{(by\ S)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ S)}$ ^ CALL * ^ $SE_{(rpt)(by\ B)}$ ^ $SE_{(by\ S)}$ ^ $SE_{(by\ S)}$ ^ CL ^ GB
C1	GR ^ SR ^ SC ^ SR ^ SC ^ $SE_{(by\ C)}$ ^ SR ^ $SE_{(by\ B)}$ ^ SC ^ $SE_{(by\ B)}$ ^ CL ^ GB
C2	GR ^ SR ^ SC ^ $SE_{(by\ C)}$ ^ $SE_{(by\ C)}$ ^ CL ^ GB
C3	GR ^ SR ^ SC ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ C)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ C)}$ ^ $SE_{(by\ C)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ C)}$ ^ CL ^ GB.
C4	GR ^ SR ^ $SE_{(by\ B)}$ ^ $SR_{(rpt)}$ ^ SC ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SC_{(rpt)}$ ^ SR ^ SC ^ CL ^ GB.
C5	GR ^ SR ^ SC ^ $SE_{(by\ C)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ $SE_{(by\ B)}$ ^ SC ^ CL ^ GB.

Key for Table 12.4.1

GR = Greeting, AD = Address, SR = Service Request, SC = Service Compliance, SE = Service Enquiry, CL = Close, GB = Goodbye, UNR = Unrelated comments, CALL = Call/ response to Call sequence, ACT = Action, S1 - S5 = TBI subjects, C1 - C5 = Control subjects, $_{by\ B}$ = enquiry initiated by bus timetable person, $_{by\ S}$ = enquiry initiated by TBI subject, $_{by\ C}$ = enquiry initiated by control subject, * = Marked (incomplete or inappropriate) element, $_{rpt}$ = Repeated, ^ = followed by

Table 12.4.2 Generic structure potential realisations for TBI and control subjects for Police Condition- Telephone interaction Study 1

Subject	Generic Structure Realisation
S1	SI ^ GR ^ ACT ^ GR ^ SR* ^ AD * ^ $SR_{(rpt)}$ ^ $SR_{(rpt)}$ ^ $SE_{(by\ P)}$ ^ SC ^ $SE_{(by\ P)}$ ^ CL ^ GB
S2	SI ^ AD ^ AD ^ SR* ^ $SE_{(by\ P)}$ ^ $SE_{(by\ P)}$ ^ SC ^ $SE_{(by\ S)}$ ^ $SE_{(by\ P)}$ ^ $SE_{(by\ P)}$ ^ SC ^ CL * ^ $SE_{(by\ S)}$ ^ $SE_{(by\ S)}$ ^ $SE_{(by\ S)}$ ^ CL ^ CL ^ GB
S4	GR ^ AD ^ AD * ^ GR * ^ SR * ^ ACT ^ CALL * ^ SC ^ $SE_{(by\ P)}$ ^ $SC_{(rpt)}$ ^ $SE_{(by\ P\ -\ PERSONAL)}$ ^ $SE_{(by\ P\ -\ PERSONAL)}$ ^ CL ^ $CL_{(PERSONAL)}$ ^ CL
S5	AD* ^ SR * ^ AD * ^ GR * ^ UNR ^ $SR *_{(led\ by\ P)}$ ^ $SR_{(led\ by\ P)}$ ^ $SR_{(by\ S)}$ ^ SC ^ $SR *_{(by\ S)}$ ^ SC ^ $SR *_{(unrelated\ by\ S)}$ ^ SC ^ $SE_{(interrupt\ by\ S)}$ ^ $SE_{(by\ P)}$ ^ $SE_{(by\ P)}$ ^ $SC_{(original)}$ ^ UNR ^ $SC *_{(rpt)}$ ^ $SE_{(by\ P\ -\ PERSONAL)}$ ^ $SE_{(by\ S\ -\ PERSONAL)}$ ^ $SE_{(by\ S\ -\ PERSONAL)}$ ^ $SE_{(by\ S\ -\ PERSONAL)}$ ^ $SE_{(by\ S)}$ ^ $SE_{(by\ P)}$ ^ CL ^ $CL_{(PERSONAL)}$ ^ GB
C1	GR ^ SR ^ $SE_{(by\ P)}$ ^ $SE_{(by\ P)}$ ^ SC ^ $SE_{(by\ S)}$ ^ $S_{(by\ S)}$ ^ $SE_{(by\ S)}$ ^ $SE_{(by\ S)}$ ^ $SE_{(by\ S)}$ ^ CL ^ GB
C2	AD ^ SR ^ SR ^ SR ^ $SE_{(by\ P)}$ ^ SC ^ $SE_{(by\ P)}$ ^ SC ^ $SE_{(by\ S)}$ ^ CL ^ GB
C4	GR ^ AD ^ SR ^ $SE_{(by\ P)}$ ^ $SR_{(rpt)}$ ^ SC ^ SR ^ SC ^ CL ^ GB
C5	SI ^ AD ^ SR ^ SC ^ $SE_{(by\ S)}$ ^ CL ^ $SE_{(by\ P)}$ ^ $SE_{(by\ S)}$ ^ CL ^ CL ^ CL ^ CL ^ GB

Key for Table 12.4.2

GR = Greeting, AD = Address, SR = Service Request, SC = Service Compliance, SE = Service Enquiry, CL = Close, GB = Goodbye, UNR = Unrelated comments, CALL = Call/ response to Call sequence, ACT = Action, S1 - S5 = TBI subjects, C1 - C5 = Control subjects, $_{by\ B}$ = initiated by bus timetable person, $_{by\ S}$ = initiated by TBI subject, $_{by\ C}$ = initiated by control subject, * = Marked (incomplete or inappropriate) element, $_{rpt}$ = Repeated, $_{(PERSONAL)}$ = Personal comments, ^ = followed by

Table 12.4.3 Number and percentage of moves in GSP elements in TBI-student interactions

Subj No.	GR	Id	Ap-I	Ap-D	C	Lt	Gb	Total moves
S1	2 (0.4%)	3 (0.6%)	83 (17%)	52 (10.5%)	339 (68.5%)	13 (2.6%)	3 (0.6%)	495
S2	3 (0.7%)	-	7 (1.7%)	225 (55%)	172 (42%)	-	-	407
S3	-	-	57 (12.5%)	133 (29%)	257 (57%)	7 (1.5%)	1 (0.2%)	455
S4	-	3 (1%)	23 (5%)	9 (2%)	395 (92%)	-	-	430
S5	-	-	3 (1%)	48 (21%)	176 (77%)	2 (1%)	-	229
S6	4 (0.5%)	26 (5%)	327 (62%)	76 (14%)	96 (18%)	1 (0.5%)	-	530
S7	3 (0.5%)	-	180 (29.5%)	32 (5%)	391 (64%)	4 (1%)	-	610
Total	12	32	680	575	1826	27	4	3156

Key for Table 12.4.3 GR = Greeting, Id = Identification, Ap-I = Indirect Approach, Ap-D = Direct Approach, C = Centering, Lt = Leave-Taking, Gb = Goodbye, S1-S7 = TBI subjects, (%) = Percentage of moves making up each structural element by that subject

Table 12.4.4 Number and percentage of moves in GSP elements in control-student interactions

Subj No.	GR	Id	Ap-I	Ap-D	C	Lt	Gb	Total moves
C1	2 (0.4%)	7 (1.5%)	-	-	462 (97.5%)	1 (0.2%)	2 (0.4%)	474
C2	4 (0.9%)	-	134 (29%)	72 (16%)	246 (54%)	2 (0.4%)	-	458
C3	3 (0.6%)	4 (0.8%)	68 (14%)	78 (16%)	331 (68%)	2 (0.4%)	-	486
C4	-	12 (3%)	3 (1%)	99 (24%)	294 (72%)	-	-	408
C5	1 (0.5%)	-	-	6 (3%)	176 (96%)	1 (0.5%)	-	184
C6	5 (1%)	-	22 (4%)	191 (32.5%)	367 (62%)	2 (0.3%)	1 (0.2%)	588
C7	1 (0.2%)	3 (0.4%)	217 (43%)	53 (11%)	219 (44%)	6 (1.2%)	1 (0.2%)	500
Total	16	26	444	499	2095	14	4	3098

Key for Table 12.4.4 GR = Greeting, Id = Identification, Ap-I = Indirect Approach, Ap-D = Direct Approach, C = Centering, Lt = Leave-Taking, Gb = Goodbye, C1-C7 = Control subjects, (%) = Percentage of moves making up each structural element by that subject

Table 12.4.5 Number and percentage of moves in GSP elements in TBI-researcher interactions

Subj No.	GR	Id	Ap-I	Ap-D	C	Lt	Gb	Total moves
S1	-	-	86 (22%)	266 (69%)	22 (6%)	12 (3%)	-	386
S2	-	-	17 (23%)	22 (29%)	31 (41%)	5 (7%)	-	75
S3	-	-	40 (41%)	-	56 (58%)	1 (1%)	-	97
S4	-	-	-	57 (36%)	96 (61%)	5 (3%)	-	158
S5	-	2 (2%)	-	30 (39%)	40 (51%)	6 (8%)	-	78
S6	2 (2%)	2 (2%)	70 (74.5%)	-	16 (17%)	4 (4%)	-	94
S7	-	-	98 (59%)	-	64 (38.5%)	4 (2%)	-	166
Total	2	4	311	375	325	37	0	1054

Key for Table 12.4.5 GR = Greeting, Id = Identification, Ap-I = Indirect Approach, Ap-D = Direct Approach, C = Centering, Lt = Leave-Taking, Gb = Goodbye, S1-S7 = TBI subjects, (%) = Percentage of moves making up each structural element by that subject

Table 12.4.6 Number and percentage of moves in GSP elements in control-researcher interactions

Subj No.	GR	Id	Ap-I	Ap-D	C	Lt	Gb	Total moves
C1	-	-	13 (6%)	118 (54%)	78 (35%)	10 (4.5%)	1 (0.5%)	220
C2	-	-	19 (4%)	339 (69%)	130 (27%)	-	-	488
C3	-	-	30 (18%)	-	135 (80%)	3 (2%)	-	168
C4	-	-	-	-	152 (97%)	5 (3%)	-	157
C5	-	-	-	-	166 (100%)	-	-	166
C6	-	-	-	72 (28%)	176 (69%)	7 (3%)	-	255
C7	-	-	30 (9%)	189 (56%)	117 (34%)	4 (1%)	-	340
Total	0	0	92	718	954	29	1	1794

Key for Table 12.4.6 GR = Greeting, Id = Identification, Ap-I = Indirect Approach, Ap-D = Direct Approach, C = Centering, Lt = Leave-Taking, Gb = Goodbye, C1-C7 = Control subjects, (%) = Percentage of moves making up each structural element by that subject

Table 12.4.7 Exchange structure analysis results for telephone interaction Study 1 - total time, total number of exchanges and total number of moves

	Total time*				Total exchanges				Total moves			
	B	P	M	T	B	P	M	T	B	P	M	T
S1	0.6	1.7	2.3	3.6	4	10	15	27	15	59	66	137
S2	5.2	1.9	6.7	2.9	20	10	51	12	108	81	207	75
S3	1.5	2.0	1.7	0.5	10	11	13	4	41	74	53	26
S4	0.7	1.9	2.2	4.4	5	17	18	18	17	60	65	99
S5	2.6	3.5	5.7	5.9	11	33	32	35	58	128	200	147
C1	1.4	2.2	2.5	4.5	6	6	10	25	40	56	65	99
C2	1.6	1.4	3.1	2.3	7	6	22	16	30	41	84	59
C3	5.8	-	-	6.1	31	-	-	17	137	-	-	87
C4	0.9	0.8	1.2	6.0	10	5	13	34	33	32	48	137
C5	2.7	3.3	3.3	8.5	14	18	17	38	53	93	100	101

S1-S5 = TBI subject interactions, C1-C5 = Control subject interactions, B=Bus timetable condition, P = Police condition, M = Mother condition, T = Therapist condition, *Time is in minutes

Table 12.4.8 Exchange structure analysis results for community education Study 2 - total time, total number of exchanges and total number of moves

	Total time*		Total exchanges		Total moves	
	Student condition	Researcher condition	Student condition	Researcher condition	Student condition	Researcher condition
S1	22	16.7	136	95	495	386
S2	20.5	4	113	21	407	75
S3	19.5	4.2	131	23	455	97
S4	31	8.5	145	43	430	158
S5	9.4	3.0	56	15	229	78
S6	19	4.0	144	28	530	94
S7	27.8	7.8	168	38	610	166
C1	21.8	10.2	107	60	474	220
C2	25.3	23	118	111	458	488
C3	20	5.8	113	37	486	168
C4	16.5	5	128	34	408	157
C5	6.2	6.2	34	40	184	166
C6	21.8	10	128	69	588	255
C7	21	15.7	141	99	500	340

S1-S7 = TBI subject interactions, C1-C7 = Control subject interactions *Time is in minutes

Appendix 12.5 CT scan results for TBI subjects in Study 1 and Study 2

Table 12.5.1 CT scan results for TBI subjects in Study 1

Subject number	CT scan results
S1	Frontal haemorrhages & multiple contusions. Fractured (L) parietal bone
S2	NR*
S3	(R) frontal and temporo-parietal subdural haemorrhages
S4	(R) temporo-parietal subdural haematoma Fracture base of skull
S5	(R) haemorrhage into interior portion of (R) frontal lobe due to contusions

* not recorded

Table 12.5.2 CT scan results for TBI subjects in Study 2

Subject number	CT scan results
S1	Frontal haemorrhages & multiple contusions. Fractured (L) parietal bone
S2	Facial injuries, (L) parietal - occipital extradural haematoma and occipital subdural haematoma
S3	(R) frontal and temporo-parietal subdural haemorrhages
S4	NR
S5	(R) internal capsule and basal ganglia haemorrhage; (R) frontal temporal craniectomy; mass effect widespread cerebral oedema
S6	Frontal haemorrhages; recurrent (L) subdural collections; extensive atrophic gross enlargement of the lateral ventricles, (R) more than (L); III and IV ventricles slightly enlarged; considerable gliosis in both frontal poles more marked on the (R)
S7	(R) frontal extradural haematoma and multiple contusions; depress fracture (R) frontal bone