CHAPTER 4: POLITENESS PHENOMENA

4.1. Preamble.

In the previous chapter, the two CHI subjects' ability to produce a coherent and effective explanation of a novel procedure was explored. While both subjects appeared sensitive to the major features to be described, they had difficulty doing this in a clear, concise fashion. Deficits in impulse control, monitoring and self correction were evident both in terms of listener perception as well as the linguistic and logical structure of their discourse.

This chapter explores another aspect of pragmatic language use. In this study the CHI subjects were required to formulate their messages in a manner which addressed the social and cultural dynamics of the situation.

4.1. Politeness Theory.

There is a literature on politeness which deals with the manner in which people negotiate with each other in their everyday communications. (e.g. Searle, 1975, Lakoff, 1973, 1875, Brown & Levinson, 1978, Clark & Lucy, 1975, Clark, 1979, Clark & Schunk, 1980, Franick & Clark, 1985, Preisler,1986). Far from being a superficial area of investigation, the study of politeness phenomena addresses important issues regarding the relationship of linguistic structure to function. This includes investigation of the role of indirect and direct meanings in social communication, how these meanings are manifested in the linguistic structure of utterances and the role that nonverbal context plays in the determination of linguistic meaning. Brown and Levinson (1978, 1987) building on the work of Searle (1975),

Goffman (1971, 1976), Lakoff (1977), Gordon and Lakoff (1975), and Clark and Lucy (1975) among others, wrote an extensive monograph detailing a variety of politeness mechanisms common to English, Tamil and Mexican languages. According to these authors, most speech acts can be seen as being in some way intrusive to the listener. Politeness is the means by which the intrusion is minimised.

Many speech acts threaten either the listener's positive or negative face. Positive face is the need to be liked, respected, etc. Negative face is the need to have one's liberty unencumbered by the actions of others. So any speech act, whether it be a request, offer, complaint or compliment may potentially threaten the hearer's positive face by indicating lack of positive regard. Alternatively it may threaten his/her negative face by infringing on his/her liberty e.g. by requesting time, energy etc. or by offering something and thereby forcing the receiver to incur a debt. The impact of the speech act on the hearer will in turn affect his/her attitude towards the speaker i.e. the speaker's face.

Brown and Levinson's model is based on the concept that speakers are part of a social environment where it is preferable for both parties to maintain their respective "face". Communication therefore operates along cooperative lines in which the addresser casts his/her communication in a manner which is as efficient and effective as possible while at the same time also preserves or enhances the face of both parties.

In situations where there is need for maximum efficiency and consideration of face is of secondary concern e.g. in an emergency or when speaking to a subordinate, the speech act may be baldly stated with no attempt at addressing the hearer's face. Often however, maximum efficiency is compromised, and the message is construed to attend to either positive or negative face, depending on the estimated threat it poses.

According to Brown and Levinson, if the threat is not considered very great, the speaker is more likely to address the hearer's positive face when making their utterance e.g. by phrasing their utterance in a way that compliments them, by joking, by assuming common ground. If the threat is larger, the speaker may choose to address the hearer's negative face e.g. apologising for the intrusion, hedging. If the threat is in fact perceived to be very great, the speaker may choose to go **off-record** i.e. will not state their true intention but will allude to it indirectly. Off-record speech acts will be addressed in the following chapter. The level of threat the utterance is likely to be to the listener is a function of the social distance between the speakers, their social power relationship and cultural determination of the level of the imposition.

The argument put forward by Brown and Levinson, as summarised above, is that politeness operates to reduce threat to face. The systematic analysis of the effect of politeness strategies provided by these authors is comprehensive and thought provoking. However it may be argued that the underlying premise that all interactions threaten face is inaccurate. According to their model, a polite compliment panders to positive face. Using the same model,

the positive politeness is a means to reduce threat to positive face. So the act both panders to and threatens positive face of the hearer. This is not a logical equation.

Such inconsistency does not invalidate the model proposed by Brown and Levinson but simply cast doubt on the concept that all speech acts are face threatening acts. It may be more parsimonious to view all speech acts as altering the social balance of obligation between speakers in either the present or long term. Politeness in this framework is a means with which the change in balance is acknowledged or negotiated. At times this may involve reducing threat to the hearer's face, but in other circumstances it may simply be a means to maintain the social balance, e.g. thanking someone for a compliment received.

Despite these criticisms, the general principal underlying the model developed by Brown and Levinson is a sound one. While the same basic message may be imparted in numerous social situations, the superficial structure of the utterance used to impart that message varies enormously. Furthermore the variation of surface structure is quite systematic and has a specific purpose. While speakers have an intention to achieve the goal of passing on their message, they also have a desire to maintain, or improve, their social standing with the addressee and use the meanings imparted by the literal surface structure to achieve this. Any speech act therefore has at least two levels of meaning.

Clark (1979), Clark and Schunk (1980) and Franick and Clark (1985) have followed up some of these concepts with empirical studies. These studies have focused on ways in which speakers avoid threatening the listener's negative face by the use of indirect speech acts. Indirect speech acts according to Brown and Levinson's model address the listener's negative face. They do this by indicating to the listener that they wish to give him/her an option not to respond to the actual request, by asking what superficially appears to be something different e.g. "Can you pass the salt" asks about ability rather than the request itself. However in this example the request is highly conventional and the true request is in fact apparent. The indirectness is therefore pro forma only.

While it may be argued that normally the literal meaning of such "frozen" idioms is no longer processed, Clark and Schunk (1980) performed a series of experiments which demonstrated that the literal meaning of common and conventional requests had a direct effect on how polite they were perceived to be. They asked raters to rank eighteen different request forms for the same basic request e.g. "Might I ask you where Jordon Hall is?"; "Will you tell me where Jordon Hall is?", and found the raters were in high agreement in their ranking order. Furthermore when the literal meanings of the conventional requests were ordered in terms of decreasing perceived politeness, they reflected a cline of increasing imposition on the hearer, i.e. increasing threat to their negative face.

In a separate experiment they found that responses which answered both the literal aspect of a question as well as the underlying message e.g. "Yes certainly, it's about six", in response to "Can you tell me the time?", were considered more polite. This was support for the notion that both literal and non-literal meanings of the speech acts were being attended to. They also found that responses could be systematically made more polite by increasing their completeness i.e. by including specific details, nouns rather than pronouns, etc. The extent to which the literal meaning of an indirect speech act was attended to could also be altered by varying the conventionality of form, by the addition of "please" which relegates the literal meaning firmly into the conventional category and by manipulating the uncertainty of the required response.

Franick and Clark (1985) investigated the manner in which requests were formulated when there was a perceived obstacle. They found that when the obstacle was absent or minimal, the requests tended to be formulated directly. When it was apparent that there was a high obstacle e.g. asking the time from someone who is obviously not wearing a watch, the request was formulated as an indirect request focusing on the obstacle e.g. "Do you know if there's a clock anywhere around here". The explanatory argument put forward by these authors was again based on Brown and Levinson's model. When there was no obstacle a simple request was of no great imposition and could be asked directly. When the obstacle was great, the indirect request was more polite, firstly because it defined the obstacle for the listener, thereby helping them to respond. Secondly by focusing on the obstacle rather

than the request itself, the listener was given a way out if they did not wish to, or could not respond.

Not only has politeness been shown to be manifested in the literal meaning of the utterance, but it has also been demonstrated in the grammatical structure of language. Preisler's monograph (1986) details his extensive empirical investigation of linguistic variants across gender and class. In particular he was concerned with what he termed "tentativeness" in language, a phenomenon closely related to indirection in speech act studies. He detailed a broad system of analysing linguistic tentativeness in terms of clause structure, use of (i) modal grammatical structures e.g. modal auxiliary verbs "can", "may", (ii) modal lexical structures which are derivatives of modal verbs, adjectives and adverbs e.g. "supposedly", "possibly", "perhaps", "in fact", (iii) tag questions and (iv) hedges. His results demonstrated that persons who were considered more tentative in their language, more frequently used a combination of incomplete clauses, modal and preterite verbs. The latter are verbs indicating conditionality framed in the past tense, regardless of the tense of the rest of the utterance e.g. "could" as opposed to "can". In the language of tentative speakers, these devices were also accompanied by tag questions, hedges and "I think". Tentative language users also more frequently used clause-internal lexical modalities e.g."possibly", again accompanied with tag questions, hedges etc.

Preisler recognised the links between tentativeness and politeness. Reference to Brown and Levinson's model places tentativeness in the sphere of negative

politeness once more. Tentativeness communicates to the listener a reluctance to impose. Brown and Levinson themselves discussed indirectness, hedges and tag questions as major strategies of negative politeness. They also argued that the simple compounding of such devices, increased the perceived politeness by increasing the apparent effort on the part of the speaker, to attend to the listener's face needs.

The preceding review has pointed out that any speech act has at least two meanings. One meaning forms the communicative intention (request, offer, complaint etc.) of the speaker and is often expressed indirectly. The second meaning is manifested in the semantico-syntactical features of the utterance i.e. its literal meaning and reflects the speaker's attitude towards the listener.

4.3. Relevance of politeness theory to language skills after CHI.

The relevance of politeness theory to language skills after CHI requires investigation. The above review exemplifies the complexity of polite verbal behaviour and underscores its importance for successful social interaction. Successful management of polite verbal behaviour requires a number of steps. Firstly the speaker must make an accurate assessment of a number of factors: 1. the information to be communicated

2. the social distance between the speaker and the addressee

3. the social power of the speaker relative to the listener

4. the cultural constraints regarding the level of imposition the speech act entails.

He must then select a suitable speech act to encompass these variables. If the speaker chooses his speech act incorrectly, for example being excessively familiar with a stranger or excessively formal with a family member, not only will his attempted communication be perceived as clumsy and "poor form" but he will have also communicated a distorted perception of the social relationship he shares with the hearer, too close in the first instance and too distant in the second. The ability to competently interact with others while maintaining one's social standing in their eyes thus requires a number of skills, accurate appraisal of the situation, selection of appropriate strategies and their successful execution.

In the previous chapter A.S. and P.B. appeared capable of assessing the dice game sensibly, but failed in their ability to translate this knowledge into verbal action. Their explanations of the game also failed to take into account the listener's informational needs. It might therefore be anticipated that they would have difficulty producing other utterances to meet the listener's social needs also. This may arise at the level of appraisal, selection or execution. In order to explore this a systematic study of their ability to manipulate the "politeness' of their communication was undertaken.

4.4. Perception of Relative Politeness.

The starting point of this enquiry was to establish whether both A.S and P.B. were sensitive to the relative impact of various linguistic devices and strategies in imparting "politeness" to an utterance when confronted with this explicitly.

4.4.1. Method.

4.4.1.1. Pilot Study

60 pairs of simple statements reflecting requests, complaints, compliments etc. were compiled. In each case one member was designed to be more polite according to criteria set out by Brown and Levinson. Many of the examples were in fact taken directly from their text. The sixty pairs encompassed a wide variety of the devices described by Brown and Levinson for example:

You say to someone "Go into my office"

or   "Come into my office"

(Positive politeness mechanism: assert common ground, minimise distance)

You ask a stranger a favour, you say

"Would you be so kind..."

or   "I wonder if you would be so kind..."

(Negative politeness mechanism: compound indirect speech act, attentive and pessimistic hedge)

A summary of the range of devices used is set out over page.'

1. Positive politeness

A: Claim common ground

1. notice hearer (compliment, show interest)

2. exaggerate

3. intensify interest for hearer

4. use "in group" markers (nicknames, slang etc.)

5. seek agreement

6. avoid disagreement

7. presuppose common ground

8. joke

B: Convey idea that hearer and speaker are cooperators

9. assert concern for hearer's wants

10. offer

11. be optimistic and assume cooperation

12. include both speaker and hearer in task (use of "we" rather than "you", etc.)

13. give reasons

14. assert reciprocity

2. Negative politeness

A: Don't presume/coerce

1. be indirect (use conventional indirect speech acts)

2. hedge (use grammatical and lexical hedges)

3. be pessimistic (use preterite form of auxiliary verb, e.g. "would" rather than "will" and/or negative form of an utterance)

4. minimise imposition

B: Communicate desire not to impinge

5. give deference (honorifics etc.)

6. apologise, give overwhelming reasons, etc.

7. make intrusions impersonal (e.g exclude pronouns from utterance)

8. state face-threatening act

9. nominalise

C: Redress other wants of hearer

10. incur debt

To make sense, each pair of sentences was preceded by a short contextual sentence e.g. "You are working in the dark. You say to your helper.." . The contextual sentence both cued the subjects into the nature of the utterance as well as the type of social context in which it was supposed to be occurring. The sixty pairs were then presented to NBD pilot populations in written form and aurally via an audio tape. In both cases the subjects were asked to choose which member of each pair was the most "friendly, persuasive and likely to succeed with the listener". 21 adults (16 women and 5 men) listened to the audio version and 42 adults (27 women and 15 men) responded to the written version. Subjects were either psychology undergraduates or hospital staff. On the basis of these results, 16 pairs were selected which had high inter-rater agreement. The sixteen pairs encompassed 11 negative politeness strategies and 5 positive politeness strategies. The results of both the written and audio versions were similar, indicating that the linguistic structure of the sentence pairs was not being unduly influenced by prosody.

4.4.1.2. Study Proper

The sixteen pairs were re-taped and presented to the two CHI subjects and

The 12 NBD subjects described in Section 1.9.2.. As in the pilot study, the

subjects were asked to choose which member of each pair was the most polite

or friendly and persuasive. The order of the members of the pairs was

randomised although the presentation order of the items remained fixed. If a

subject so requested, individual items were replayed before a decision was

made. A list of the sixteen sentence pairs along with a description of the

particular politeness mechanism they utilised, can be found in Appendix 3.1.

4.4.2. Results.

Both CHI subjects selected the more polite versions of the sentences, with

approximately the same frequency as the control subjects. Control mean =

14.75, S.D. = 1.46. A.S. selected 13 and P.B. selected 14 of the "more polite"

sentences. This selection rate was within the same range as that of the

normal subjects (11 to 16) and was therefore considered to reflect an

unimpaired performance.

4.4.3. Discussion

The two CHI subjects were sensitive to the impact of politeness phenomena

in this study and able to discriminate the more polite form. The sixteen

items selected for this study were those which achieved very high inter-rater

agreement in the pilot study. They therefore represented very clear and

unambiguous examples of the effect of politeness phenomena. It may well be

that more subtle discriminations, if investigated, would have revealed

differences between the CHI and NBD subjects. However, methodologically this would have been extremely difficult.

As the pilot study demonstrated, a large number of the polite strategies proposed by Brown and Levinson were not universally accepted by the 63 normal subjects as being more polite than their "unmarked" alternative, although in most cases trends were apparent. These other items may have reflected a greater range in subtlety of politeness mechanisms. However, if the CHI subjects' ability to discriminate between these was to be investigated, a large group study, incorporating many more CHI, would have been necessary in order to overcome subject variability. The results of such a study would have yielded quantitative differences only and contributed little to an understanding of the specific impairment involved. Suffice to say that this study indicated that both A.S. and P.B. were able to discriminate between a range of basic politeness phenomena in a consistent fashion.

4.5. Ability to utilise Politeness Strategies.

Having established that the CHI subjects were sensitive to the relative impact of a range of politeness phenomena in a forced choice situation, it was of interest to determine whether they had retained their ability to use these selectively.

4.5.1. Method

A list of 23 social contexts was generated in which some type of verbal interaction was required. These included complaints, requests, compliments

and apologies. The social contexts chosen were varied to encompass a range

of social distance between speakers, conventionality of interaction and

cultural imposition. The introduction to each item, as described to the

subjects, is detailed in Appendix 3.2. Two examples are as follows:

(1) You are at home with the family watching television and you want to

change the channel. What would you say?

(2) You ask the bank teller to change your large bag of coins. What would

you say?

Each CHI and NBD subject was interviewed separately in a quiet room by

the clinician. The particular social context was described and the subject was

asked how best he might phrase his request, complaint etc. Explanation in

the third person (e.g. "I'd just appeal to her better nature...") was discouraged

although it was not always possible to eliminate it altogether. All responses

were audio taped and transcribed verbatim.

4.5.2. Results

The material generated was voluminous and preliminary analyses suggested

that the CHI performances on these tasks were not qualitatively dissimilar to

their NBD counterparts. Formal description and analysis of their responses

will therefore be restricted to ten requests.

4.5.2.1. Criteria for Measuring Politeness

The responses were analysed for the number and type of positive and

negative politeness mechanisms. Type of mechanism was defined along the

dimensions described by Brown and Levinson and detailed in the Section 4.4.1.1. Positive politeness mechanisms were those which pandered to the listener's positive face and negative devices catered to the listener's need to be unencumbered. A mechanism could be either a linguistic device e.g. preterite modal auxiliary verbs such as "could" and "would", hedges such as "um", "ah", "is it OK" or a politeness strategy which was identified in broader semantic terms. A politeness strategy was defined as a non-stereotypical phrase or set of phrases the meaning of which served a function according to one of Brown and Levinson's categories. e.g. when asking a stranger the time asking "Could you let me know the time" rather than the more commonplace "Could you tell me the time" (strategy of minimising imposition: negative politeness mechanism).

Indirect speech acts were scored in the following manner:

"Can I borrow"   = 1 (indirect speech act)

"Could I borrow"   = 2 (indirect speech act plus preterite form)

"If you wouldn't mind" = 3 (indirect speech act plus preterite plus negative form)

Preterite verbs and negative forms, considered by Preisler to convey tentativeness (1986) are classified as pessimism devices under Brown and Levinson's system.

The scoring of other politeness strategies was similar to that of the indirect speech acts. While a politeness strategy spanning a number of phrases was

counted as one mechanism, any linguistic politeness devices within those phrases were scored as additional mechanisms.

Extra detail, i.e. the fleshing out of a request/response with specific details more than is customary or necessary, was shown by Clark and Schunk (1980) to affect the perceived level of politeness and was therefore also scored. From Clark and Schunk's work it was unclear whether they consider extra detail to be a positive or negative device. They stated that the role of extra detail is to be attentive to the listener's face which according to Brown and Levinson places it in the positive politeness category. However Clark and Schunk (1980) were discussing **responses** to requests. In the context of this study extra detail formed part of the request itself. It was incorporated mostly into indirect speech acts which are negative politeness strategies.

Therefore for the purposes of this analysis extra detail was considered a negative politeness strategy, if it formed part of an indirect speech act or other negative politeness strategy and a positive politeness mechanism if it was part of a positive politeness strategy. An extra detail was defined as a detail which was not in the original description nor in the modal response. For example the majority of responses did not include "behind you" when making the response "Could you please close the door?".

The use of "please" was considered a negative politeness mechanism because it formalises the request and therefore increases the distance between the speaker from the hearer.

Because the responses on this task were open-ended the number of mechanisms for each item varied from one subject to the next. Even so absolute numbers were reported because in many items there were very few politeness mechanisms used overall. Also the analyses were concerned with **relative** use of politeness over different contexts. Variability in individual style in the use of politeness was not relevant. Anticipated verbosity in the protocols of the head-injured was not expected to affect the differential use of politeness mechanisms across contexts.

4.5.2.2. Classification of Request Type

In order to compare use of politeness mechanisms across different contexts, the ten items were classified along two dimensions, social distance and level of imposition of request. These classifications are summarised in Figure 4.1.

Figure 4.1. Classification of the ten items according to social distance, level of imposition and conventionality of request.

ITEM	STATUS OF LISTENER	IMPOSITION OF REQUEST	CONVENT- IONALITY REQUEST
1. Request time.	Stranger	Low	High
2. Ask to speak to John Smith.	Stranger	Low	High
3. Change coins at bank.	Stranger	Medium	Medium
4. Ask for soap powder in shop.	Stranger	Low	Medium
5. Ask to play with child.	Stranger	High	Low
6. Request door to be shut.	Workmate	Low	Medium
7. Request radio to be turned down.	Family	Low	Medium
8. Ask for an apple.	Friend	Low	Medium
9. Ask for a cup of tea.	Family	Low	Medium
10.Ask for car.	Family	High	Low

4.3.2.3. Quantity of Positive and Negative Devices

The mean number and individual range of politeness devices used by the

NBD and two CHI subjects are summarised in Table 4.1

Table 4.1. Mean number and individual range of polite devices used by NBD subjects (N = 12) compared to total number used by A.S. and P.B.

ITEM	NUMBER OF DEVICES			
	NBD		A.S.	P.B.
	X	RANGE	TOTAL	TOTAL
1.	2.5	0 - 4	2	3
2.	3.6	0 - 7	2	4
3.	4.8	2 - 7	8	7
4.	2.7	0 - 6	3	3
5.	4.5	1 - 8	8	11
6.	2.2	1 - 6	6	6
7.	2.7	1 - 4	6	4
8.	2.0	0 - 7	3	4
9.	2.3	0 - 5	1	5
10.	4.5	0 - 9	7	13
TOTAL	31.6	16 - 56	46	61

Summed over all ten items, the A.S. proffered a total number of politeness mechanisms within the same range as that proffered by the 12 control subjects (16-56). P.B. proffered slightly more although given the breadth of the range this is not considered significant. Thus the tendency of both A.S. and P.B. to be verbose in some contexts was not reflected in an inflated number of politeness devices used. The results for both the head injured and control subjects varied in predicted directions according to politeness theory. The similarities between the performances of both A.S. and P.B. and the 12 control subjects were more apparent than the differences.

There were three requests in which the level of imposition was considered to be relatively high. These were: the request to change a large bag of coins,

the request to hold a stranger's child and the request to borrow a car, when the owner needs it herself. From Table 4.1. it can be seen that these three items (Items 3, 5 and 10) attracted the greatest number of politeness devices overall, by both the CHI subjects and the controls. The average number of devices NBD and CHI subjects used in these three items (high obstacle condition) was compared to the average number used in the other seven (low obstacle condition). A Wilcoxin signed rank test proved the difference to be significant (T+ = 115, p < .0001). This relative increase in the number of devices used when there is a perceived obstacle, is consistent with similar findings reported by Clark and Schunk (1985). The mean number and individual range of positive and negative devices for CHI and NBD subjects is summarised in Table 4.2.

Table 4.2. Mean number and individual range of positive and negative devices used by the NBD subjects (N=12) and CHI subjects, A.S. and P.B. for each of the ten items.

ITEM	POSITIVE DEVICES				NEGATIVE DEVICES			
	NBD		A.S.	P.B.	NBD		A.S.	P.B.
	X	Range	Tot.	Tot.	X	Range	Tot.	Tot.
1.	0	0	0	0	2.5	0 - 4	2	3
2.	0.1	0 - 1	0	0	3.5	2 - 7	2	4
3.	0	0	2	2	4.8	2 - 7	6	5
4.	0	0	0	0	2.7	0 - 6	3	3
5.	1.3	0 - 4	4	2	3.2	0 - 7	4	9
6.	0.5	0 - 3	1	0	1.7	0 - 3	5	6
7.	1.3	0 - 2	3	0	1.4	0 - 3	3	4
8.	0.7	0 - 2	2	2	1.3	0 - 6	1	3
9.	0.7	0 - 1	1	2	1.7	0 - 4	0	3
10.	0.6	0 - 1	1	2	3.9	1 - 8	6	11
TOT.	5.0	1 - 10	14	10	26.6	14-50	32	51

Both the CHI subjects and the NBD subjects used far fewer positive

politeness mechanisms than negative. Treating all subjects as one group, a

Wilcoxin signed ranks test proved this to be significant (n = 14, T+ = 105,p<

.001).

As the literature would predict the NBD group used more negative politeness

mechanisms when dealing with strangers (Items 1-5) than with family or

friends (items 1-6) (n = 11, T+ = 61, p<.005). and A.S. and P.B. did also. The

control group also used more positive politeness mechanisms when dealing

with their family and friends than with strangers (n = 12, T+ = 78, p<.002).

A.S. and P.B. performed in a similar pattern.

4.5.2.4. Type of Politeness Mechanism Used

Within the categories of negative and positive politeness there were a variety

of strategies as defined by Brown and Levinson, which were used by both the

CHI and control subjects. Positive politeness strategies included making

jokes, using slang ("in group" language) using "we" to include speaker and

hearer. Negative devices included hedging, apologising etc. In Tables 4.3 and

4.4 the average frequency with which various negative and positive

politeness mechanisms were utilised by the twelve control subjects is

summarised as well as the total numbers for the two head injured subjects.

Table 4.3 Average number and range of **Positive** politeness devices used by 12 control subjects compared to total positive devices used by A.S. and P.B.

DEVICE	NBD (N = 12)		A.S.	P.B.
	X	Range	Total	Total
1. Use "in group" language	1.8	0 - 5	4	0
2. Assert concern for hearer	0.8	0 - 2	1	0
3. Hearer	0.7	0 - 2	0	0
4. Give reason	0.7	0 - 2	3	6
5. Joke	0.4	0 - 1	2	2
6. Presuppose common ground	0.3	0 - 1	0	0
7. Be optimistic	0.2	0 - 1	2	1
8. Include both speaker and hearer	0.1	0 - 1	0	0
9. Extra detail	0.1	0 - 1	2	1

Table 4.4 Average number and range of **Negative** politeness devices used by 12 control subjects compared to total negative devices used by A.S. and P.B.

DEVICE	NBD (N = 12)		A.S.	P.B.
	X	Range	Total	Total
1. Indirect speech act	9	6 - 13	13	14
2. Pessimism	5.3	1 - 11	5	12
3. Hedge	4.8	1 - 11	1	5
4. "Please"	3.2	1 - 6	7	10
5. Apologise	2.33	0 - 6	1	0
6. Minimise Imposition	1.1	0 - 5	3	6
7. Extra detail	0.8	0 - 2	2	3
8. Incur debt	0.1	0 - 1	0	0
9. Give deference	0	0	0	1

The pattern of differential use of devices was similar for the CHI and NBD subjects. Individual variation in relative use of particular politeness mechanisms was quite large. In almost all categories the number of times A.S. or P.B. used a particular mechanism was within the normal range. Both A.S. and P.B. did use the term please more often than controls (A.S. total of 7 times, P.B. total of 10 times, normal range 1-6) although again, given the width of the normal range, this difference was not significant. Indirect speech acts were used almost universally by all subjects for all types of requests. The preterite form of modal auxiliary verbs, indicating pessimism, was used less often, although interestingly P.B. always used this form in all his requests.

4.5.2.5. Use of "Please"

Use of the term "please", as noted by Clark and Schunk (1980), increases the conventionality of an indirect speech act as well as the formality of the request. It would therefore be expected that subjects would be more inclined to use "please" when the request context was a very conventional one. In Table 4.5 the mean usage of please averaged across NBD subjects and items for the two highly conventional requests, the six reasonably conventional requests and the two unconventional requests is displayed, along with the mean number of "please" items offered by A.S. and P.B.

Table 4.5 Mean frequency with which NBD and CHI subjects used **"please"** in their request.

Subjects	CONVENTIONALITY		
	High (2 items)	Medium (6 items)	Low (2 items)
NBD Subjects **(N=12)**	0.8	0.2	0
A.S.	1.0	0.8	0.
P.B.	1.0	1.2	0.5

The prediction that "please" would be used less as the requests became less conventional was born out. Two separate Wilcoxin signed rank tests on the control subjects use of please in the three conditions significantly supported this observation. Difference between high and medium was significant at (n = 12,T+ = 77, p < .0005), as was the difference between medium and low (n = 10, T+ = 46, p <.03). As can be seen A.S.'s relative use of "please" also varied in the predicted direction. P.B. used "please" slightly more in the medium group, but also used it less in the unconventional items.

4.6. Discussion

This study demonstrated that the CHI subjects were similar in profile to the controls in general terms in their use of politeness mechanisms when making requests over a wide range of measures. Overall they used approximately the same number of polite devices, showed a preference for negative devices with strangers and increased their usage of positive devices when dealing with friends and family. They also produced more elaborate "effortful" requests when the perceived imposition of the request was relatively high. The pattern

of their usage of the term "please" in more conventional requests was also in a similar direction to that of the controls.

Thus the two subjects demonstrated a preserved capacity to evaluate a hypothetical social context and generate a request using politeness mechanisms which were appropriate to that context. There were however certain qualitative features of their performance which merit comment.

A.S. produced a number of requests in which the intent of the utterance was ambiguous, e.g. when requesting someone shut the door he stated *"Do you mind shutting the door, do you want me to shut it?"*. Whether the latter part of his request was meant jokingly or defiantly is unclear but it certainly is not conventionally polite. Similarly, *"Do you mind if I vacate an apple from your fruit bowl"* was considered an odd use of language although not untypical of this subject. A.S.'s responses were also contaminated by the inevitable disinhibited comment such as *"There's a saying for apples isn't there, an apple a day keeps me away"*.

P.B.'s language was much less ambiguous and his requests less flippant. On the whole his requests were fairly lengthy and negatively polite. This pattern was evident in at least one control subject and may be a normal variation of manner. It is of interest however, to speculate why this was P.B.'s preferred style. According to his wife, P.B. was a very confident straight-forward person who saw the world in "black and white" prior to his injury. This was not reflected in his choice of politeness mechanisms in this study. His

approach was much more one of self-consciousness and apology. Although P.B. had little to no insight concerning the nature of his disability, he was also, at the time of this study, preoccupied with his head injury. His self-conscious and apologetic manner may therefore reflect this preoccupation.

Despite the differences between them, there were features of A.S. and P.B.'s responses which were similar, in particular their responses to the more unconventional and difficult requests. Both CHI subjects used a joke to introduce the request to change a large bag of coins. No other subject did this. While obviously the way one interacts with a bank teller may vary from formal to friendly dependent on familiarity, demeanour etc., it is interesting that in the absence of this information the control subjects preferred the neutral, formal approach. The CHI subjects on the other hand were happy to "launch in".

Their responses to the request for a car was of interest in a slightly different way. A strategy used by many subjects was to attend to the car owner's wants, for example by offering to drive her, call a cab, etc. Given that it was clearly specified in the instructions that she needed her car that night, this was an appropriate strategy . Both A.S. and P.B. also attended to her wants, but both of them did this by specifying that they would look after the car as well as they could, fill it with petrol etc. issues that are secondary in this situation. Neither A.S. nor P.B. offered any compensation for the owner's loss of transport. They were unable to perceive the situation from the hearer's point of view despite the clear lead-in given by the instructions. Knowing

that there was an obstacle but failing to empathise with the hearer, they resorted to conventional wisdom about the etiquette of borrowing cars.

A similar insensitivity to the view point of the hearer occurred in the responses of A.S. and P.B. to the request to hold a stranger's child, which was a novel scenario for all subjects. While technically their responses incorporated similar types of politeness mechanisms to control subjects, the subjective impression was that their requests would not have been successful.

The two requests are transcribed verbatim below:

A.S. *"Do you mind if I have a go, would you like a rest, give me a chance to have a go for a while let him tangle my hair...."*

P.B. *"Oh Madam would you mind if I held held your child... this train trip's annoying me er um I'm bored to tears and if you don't mind me holding your child , I'll look after him for a little for a little while while I'm on the train trip."*

A.S.'s request to "have a go" seems too familiar for the circumstances, while P.B.'s reliance on negative politeness mechanisms, resulted in a request which appears extremely stilted and formal for what was afterall, a fairly delicate negotiation.

4.7. Conclusion

To conclude, the CHI subjects have retained a basic capacity to recognise different social situations and are able to select politeness mechanisms that are appropriate for the particular context. This is particularly true when the request is sufficiently commonplace, and the subtlety of negotiation required

is low. When most adults make commonplace requests, they need not perform much social analysis since they have experienced a myriad of similar social encounters in the past which guide their responses. Unlike the developing child who has to learn patterns of social interaction, the formulation of a commonplace request by a mature adult is quite routine.

There was however some qualitative suggestion that as the delicacy of negotiation (the perceived level of imposition) increased, the CHI subjects responses became less effective. Requests which involve negotiation also tend to be less conventional. This raises the question whether these head-injured subjects do in fact have difficulty making effective requests, when the situation is novel, or they are unable to rely on "tried and true" formulae in the formulation of the request. In these situations they have to be able to both effectively analyse the context including the view point of their audience and also generate a non-conventional verbal strategy which will effectively address the relevant issues.

4.8 Making Requests in Inhospitable Contexts

To explore these issues a second, more complex set to tasks, similar in format to the ones above, was devised. In this second set the subjects were asked to formulate a request in a hypothetical context in which there was a defined reluctance on the part of the requestee to comply. Two examples of these are as follows:

(1) You normally work night shift but for one particular night you really need to get out of it. You decide to ask a fellow worker,

although you know that he\she hates night shift. What would you say?

(2) You answer an advertisement for a second hand car which you really want. When you get there the owner has already promised it to someone else. You cannot offer more money but decide to try to convince him to sell it to you instead. What would you say?

The responses of all subjects to this type of task was extremely varied. Most subjects phrased their responses in the third person, describing a possible strategy rather than providing direct utterances. With some subjects the task also required interactive responses from the addressee which in itself increased the variability of the language samples. The results were therefore not quantified or analysed formally. None-the-less, it is worth making some qualitative observations regarding the material.

A.S. performed poorly. His requests often started succinctly, but he was unable to inhibit sexual innuendos and tangential arguments. For example, in the night shift scenario, he began by trying to convince the other (female) party of the merits of night shift in terms of solitude etc. but then pointed out that rape would be a potential concern. In his attempts to convince the other person to do his bidding on all items, he would resort to increasingly unlikely and dramatic arguments. He rarely used a strategy which negotiated some reciprocity with the other person and if he did this was a last resort.

P.B.'s choice of arguments was more in keeping with the control group. His negotiations however, were characterised by the overly long, repetitive style seen in his explanation of the dice game. While some control subjects also made rather long utterances in the formulation of their requests, these would usually reflect an elaborate strategy of argument e.g. how one might work up to the request over a few weeks. In contrast, P.B.'s arguments were usually not overly complex, simply repetitive. Like A.S. he never considered reciprocity in his negotiations i.e. he did not consider the argument from the other person's point of view.

These observations indicated that A.S. and P.B. were impaired in their ability to make more demanding social negotiations. However, due to the complexity of the material, this was difficult to confirm quantitatively.

An alternative study was therefore conducted to look at the CHI subjects ability to formulate less conventional social requests. In this study, described in the following chapter, the requests were made in the form of hints.

CHAPTER 5: HINTS

5.1. Preamble

In this chapter the ability of the CHI subjects to produce indirect "off record" requests in particular, hints, is explored. As with the previous study, an experimental paradigm was designed in which the subjects were required to respond to hypothetical request situations. While comparison between competence in the hypothetical and "real life" situation must necessarily be guarded, the features displayed by the CHI subjects will be seen to be robust and have obvious ramifications for their everyday communicative competence. Because this field is relatively unexplored in an experimental sense, features of normal indirect request making were also investigated.

5.2. Off Record Requests

In Chapter 4, politeness mechanisms were discussed and the relative ability to utilise them by CHI and control subjects was explored. As Brown and Levinson defined them, those mechanisms were used to make "on-record" requests more polite and persuasive from the listener's point of view, either by appealing to their positive face or acknowledging the threat to their negative face.

According to these authors, a different strategy is utilised to make a request in situations where the request is judged to be particularly face threatening. This is the use of off-record requests. Off-record requests are made indirectly in the sense that the literal meaning may be irrelevant to the context (contradicting Grice's maxim of relevance), insufficient (contradicting

the maxim of quantity), contrary (contradicting the maxim of quality), or ambiguous (contradicting the maxim of manner). The listener is therefore compelled to resort to other contextual information in order to interpret the indirect or implied meaning of the communication. The request is thus made by implication rather than direct statement.

Brown and Levinson have argued that off-record requests are the least face threatening form, since they allow the listener one or more alternative interpretations of the communication other than the actual request. Because they are not as conventional as their on-record counterparts, the literal interpretation has more credibility. Thus if hearers do not wish to comply and yet do not wish to be seen to be uncooperative they can respond to this literal meaning. In this way both the speaker and hearer can "pretend" the request did not take place. Brown and Levinson discussed a variety of off-record requests, of which hints were described as a sub-category. However for the purposes of this investigation the term hints will be used to refer in general to all off-record requests.

The person who wishes to make an off-record request has a complex task. To be off-record the message must not literally state its purpose. In order to be effective however it must a) encourage further interpretation beyond the initial, literal understanding and b) be of a form which will guide the listener to aspects of the context relevant to its interpretation. Speakers must therefore understand the various parameters of the context which underlie

the request. They must also be deft in crafting a verbal message which implicates but does not state at least some of those parameter/s.

5.2.1. Two Dimensional Nature of Hints

An off-record request or hint may thus be conceptualised as operating along two dimensions, 1. the parameter of the context it refers to and 2. its directness.

5.2.1.1. The Parameter of the Request Context

Whenever a request (or other speech act) is made there are always numerous qualitatively distinct aspects of the context which can be exploited in formulating the utterance. For example the speaker may refer to the motives for the request, "I'd like some salt with this soup" or the conditions necessary for the request to be fulfilled, "Is there any salt here?". Brown and Levinson have suggested that:

"the class of viable hints for any particular communicative intent is likely to correspond closely with the set of practical reasoning premises that underlie the actor's decision to convey his intent." (p.143).

Not only are there always a set of "practical reasoning premises" underlying the decision to make the request, but there is an inherent order to these. Clark (1978) in his discussion on indirect speech acts, argued that less conventional, more indirect speech acts or hints according to the definition used here, convey chains of meanings which refer to background knowledge the speaker and hearer share. These chains of meaning represent chains of practical logic.
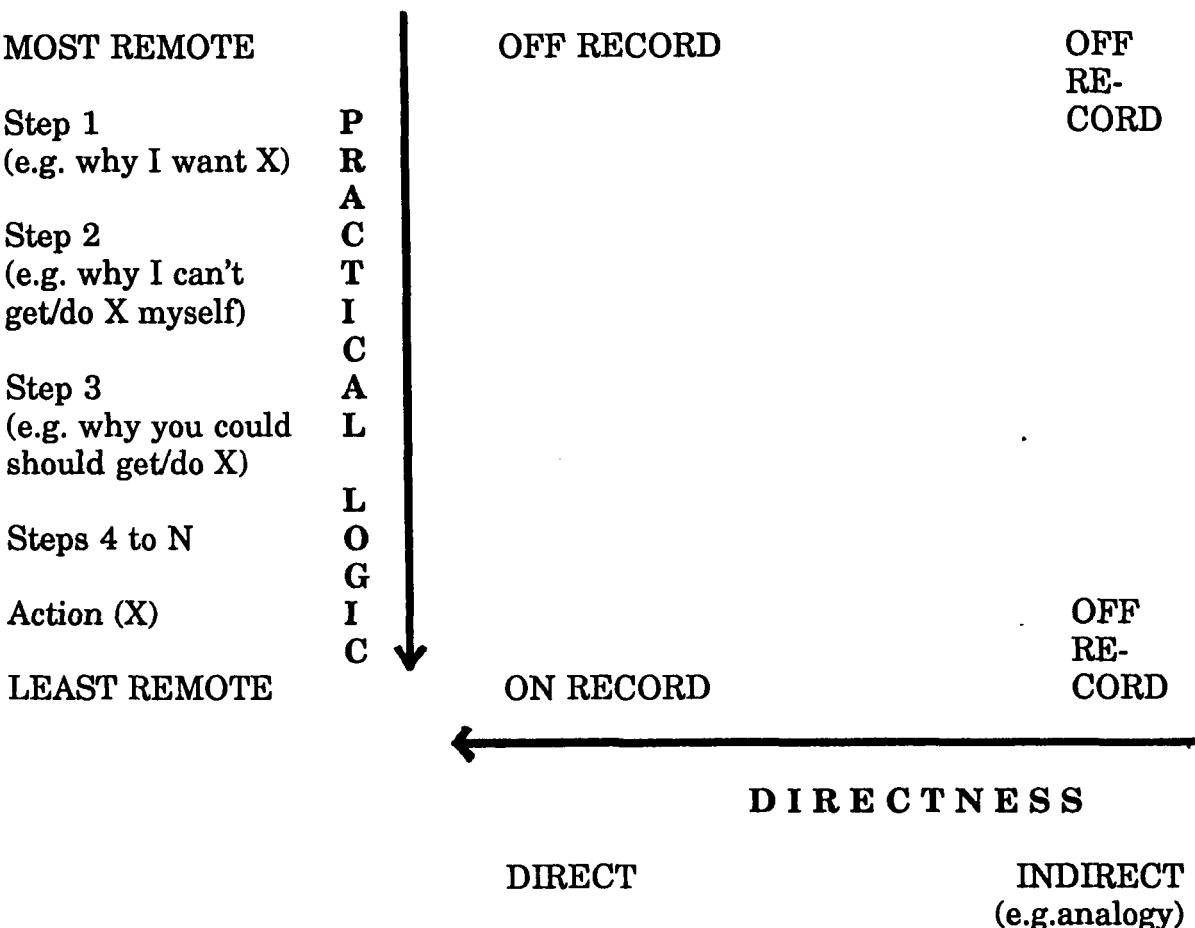
Thus any hint can exploit one of a set of premises which form steps in a sequence of **practical logical reasoning** leading up to the decision to make the request. For example a practical logical sequence may have a causal order, starting with the initial motivations for a particular action, proceeding on to reasons why the requester is unable or unwilling to satisfy his/her own desires, why the requestee is in a position to be able to act to satisfy the request, and ultimately ending with defining the action itself.

5.2.1.2. The Directness of the Hint.

No matter what aspect of the request situation the requesters choose to use as the basis for their hints, they can allude to it either directly or indirectly. Indirect reference may be achieved via such mechanisms as analogy, ambiguity, irony, incompleteness etc. If the aspect the requesters are referring to is logically remote from the required action e.g. stating how they are feeling, which is the initial motivation behind the request, then the request remains off record whether the parameter is stated either overtly or by implication. If on the other hand, the requesters focus their requests at the level of defining the required action, they must do this indirectly if the request is to be off record. A request which is formulated to be both direct and aimed at the required action becomes an **on record** request.

This two dimensional character of off record requests is represented schematically in Figure 5.1

Figure 5.1 Schematic representation of the two dimensions in which a hint can be formulated.

MOST REMOTE		OFF RECORD	OFF RE- CORD
Step 1 (e.g. why I want X)	P R A		
Step 2 (e.g. why I can't get/do X myself)	C T I C		
Step 3 (e.g. why you could should get/do X)	A L		
Steps 4 to N	L O G		
Action (X)	I C		OFF RE-
LEAST REMOTE		ON RECORD	CORD

DIRECTNESS

DIRECT   INDIRECT
                        (e.g.analogy)

5.3. Likely Impact of CHI on Capacity to Produce Off Record Requests.

It was anticipated that A.S. and P.B. would both have difficulty making off-record requests or hints although their incapacities may reflect separate impairments for the following reasons.

(i) In a "hint" situation the more remote parameters underlying the request have to be extrapolated from knowledge of the desired action. This may be an inferential task of some complexity. As described in section 1.9.2., P.B. had major difficulties with assuming the abstract attitude. His assessment of

most problem solving tasks was concrete and superficial. He would therefore have difficulty formulating a hint, the content of which corresponded to the required action only in an inferential way. His off-record requests might therefore be limited to those which allude to the required action itself. A.S. was not stimulus bound to the same extent, so this may not be a problem for him.

(ii) For similar reasons P.B. may find the use of non-literal reference, such as irony, metaphor etc. difficult. His strategies in producing off-record requests may therefore be limited to literal but incomplete or ambiguous references.

(iii) In order for the off-record request to be effective i.e. truly off-record, subjects must refrain from stating the true intent of their communication baldly. Given both CHI subjects suffer from verbal disinhibition, such restraint may be difficult. This difficulty would presumably affect both dimensions of the request so that the subject not only focuses on the required action, but may express the request for that action in a direct format.

In order to test these observations empirically the following study examined hints produced by the CHI subjects, A.S. and P.B., compared to the 12 NBD control subjects.

5.4. Method

5.4.1. Stimulus Material

Eight descriptions of common social situations were formulated in which a request needed to be made. Within each description it was stipulated that the request must be expressed as a hint. The entire eight items are set out in Figure 5.2.

Figure 5.2. Stimulus items for hints

Item 1. You are at the pub and it is the turn of the person next to you to shout the next round. He is talking and obviously hasn't noticed. How would you hint that it is his turn to go to the bar?

Item 2. You are at a friend's place and you would like to borrow a record. What sort of hint could you make?

Item 3. Someone you know borrowed twenty dollars from you some time ago and you think they've forgotten. Is there anyway you could hint to remind them to return your twenty dollars?

Item 4. You are sitting across the dinner table from the person you drove there with and there are a few other people at the table and you want to hint that you would like to go home, what would you say?

Item 5. You know a friend has a party on this weekend and you want to go but they have not invited you yet. How would you hint that you would like to come to the party?

Item 6. You want to be given a shirt of a particular kind for Christmas. How could you hint that to your wife (or friend)?

Item 7. You are eating a meal at a friend's place and you want some tomato sauce but there's none on the table. How would you hint that you would really like some?

Item 8. You take turns driving to a party with your friend but they have not had a turn for a while. How would you hint that he/she should drive this time?

5.4.2. Procedure

The subjects were interviewed individually in a quiet room with all conversation between the interviewer and the subject taped on a portable

cassette recorder. The general nature of the task was explained i.e. that several common social situations would be described and the subject would have to imagine themselves in that situation and think how best they might make a hint to get what they wanted. It was emphasised that the request should **not** be made directly. If the subject offered a direct request or a non verbal alternative (e.g. *"Well you could just bump him on the arm a couple of times"*) he was asked if he could try again to give a verbal hint.

5.4.3. Transcription

The entire interview session for each subject was transcribed. The subjects' utterances directly reflecting their attempts to hint were then extracted excluding all justifications, elaborations, description of non-verbal options etc.. All such utterances including initially unsuccessful attempts, successive tries and self-corrections were retained for later analyses.

The number of responses for each subject varied. Where the subject offered an extended response with a number of components e.g. "starting to get a bit dry ...wonder who's round it is?", this was divided into separate units for the purposes of analyses.

5.5. Illustration of Range of Responses

The full list of responses is set out in Appendix 4. For the purposes of illustration the responses from Item 1 are listed in Figure 5.3. overpage.

Figure 5.3. Compiled responses to item 1: hint that someone should shout a drink at the pub.

A. RESPONSES OFFERED BY NON BRAIN DAMAGED SUBJECTS (N=12)

BK	1.	Jeez I'm getting a bit thirsty
BN	2.	Bit dry....
DM	3.	Have you ever heard the story of Burke and Wills? (Australian explorer who died of thirst in central Australia)
GW	4.	(knock over glass) Thank God that was empty
IS	5.	Heh Bill Gee you've got long pockets
RF	6.	Was my shout last time?
BM	7.	It's a dry argument
CS	8.	Anybody ... does anybody else um need a beer because mine's empty
GL	9.	Gee that was nice I could do with another one of those
IN	10.	Who's shout now?
MH	11.	A man's not a camel
SM	12.	Starting to get a bit dry
	13.	Wonder whose round it is?

B. RESPONSES OFFERED BY HEAD INJURED SUBJECTS (N=2)

P.B.	1.	It's your turn now
A.S.	2.	It's your turn for a walk mate
	3.	It's your shout
	4.	It's your round
	5.	Come on mate it's your go.
	6.	your walk to the bar
	7.	It's your go...
	8.	Go on, your turn

Inspection of the range of responses obtained reveals that the hints can be classified in the two dimensions described previously, firstly, according to their positions in a sequence of practical logic and secondly, according to how directly they stated the underlying proposition.

5.6. Analysis I: Classifying responses according to

dimension 1: Position in the sequence of practical logic

As predicted the hints made by the subjects varied with respect to the particular aspect of the request situation they referred to. For example some referred to the personal need giving rise to the request, e.g. *"I'm getting a bit thirsty"*, others referred to the reason why the person being asked should provide it, e.g. *"Whose round is it now?"* (implying that it is the turn of someone in particular), while others referred to the reason why the requester is unable/ unwilling to provide it himself, e.g. *"Was my shout last time"*.

Furthermore, in line with Clark's concept of chains of meaning (1978), the hints and the underlying premise they corresponded to, varied in their logical distance from the actual request. For example the statement *"I am thirsty"* is referring to a fairly general state of affairs which may form the initial desire behind the specific request *"It is your turn to go and buy me a drink"* but is none the less reasonably remote from it. The statement *"I wonder whose round it is?"* is a step further down the track to alleviate the speaker's thirst and is more specific in its reference i.e. that in fact someone should be buying drinks, but is still not the specific request. *"It's your turn"* is quite specific in its reference to the request.

To implement this analysis a sequence of practical logic had to be established for each request situation. This hierarchy could then be used to classify the subjects' responses in an order ranging from those focusing on the most remote aspect to those focusing on the actual goal i.e. the required action.

5.6.1. Establishing the Sequence of Practical Logic

5.6.1.1. Procedure

For Items 1-8 a list of propositions was generated by the investigator to represent a range of aspects of the request situation. The list was generated by incorporating,

1) the underlying propositions reflected in the range of responses obtained by CHI and NBD subjects,

2) any other propositions reflected in the original stimulus material that were not used by the subjects (including reference to the required action when this was not used by any subject).

The propositions were in some cases similar, but not necessarily identical, to the actual responses. These items were then to be submitted to a panel of judges for ordering and for this purpose they were arranged in a randomly ordered list with the exception of the proposition reflecting the required action i.e. the actual request, which was always placed at the bottom of the list.

The eight sets of propositions were then given to 11 judges who were not linguistically trained. They were asked to rank them in a logical order starting from the most general or distant proposition and ending with the actual request. The number of propositions in each set varied from five to seven. In some cases the propositions represented alternative possibilities e.g. when wishing to leave a dinner party a statement about being tired

versus feeling unwell. None-the-less, the raters were asked to attempt to rank them without ties.

5.6.1.2. Results

The data from the 11 raters was summated. The modal rank attributed to each proposition was used to determine its position in the sequence of practical logic. The lists of propositions in the order thus assigned to them are set out in Appendix 4, along with the frequency of assignment of the particular rank. For the purposes of illustration, Item 1 is detailed in Table 5.1.

Table 5.1. Rank order of propositions representing practical logic framework to be used to classify responses to Item 1 (the pub).

MODAL RANK*	(FREQUENCY)	PARAMETER
1	(6)	I am thirsty
2	(5)	My drink is finished
3	(5)	I want another drink
4	(5)	I bought the last round
5	(7)	It's not my shout
6	(7)	It's your turn
7	(11)	Go to the bar and buy me a drink

*Kendell Coefficient of Concordance :W =.803,p>.01

The ratings given by the 11 raters supported the notion that the various propositions reflecting different aspects of the request situation do fall into a consistent logical order. While there was some variability as to the exact rank a particular statement attracted, there was very high agreement between raters ranking propositions within a narrow range e.g. first or second, last or second last. For each item an estimate of inter-rater agreement of rank order

was derived using the Kendell Coefficient of Concordance (Seigel & Castellan, 1988). These indicated significant inter-rater correlations (W ranged from .235 to .803) for all items except one, Item 6, that dealing with a request for a shirt for Christmas.

This particular item included propositions which were ranked by some raters as very remote and by others as very close to the required action. This confusion reflected the fact that most of the propositions were hypothetical only and did not represent actual strategies used by the subjects. Both CHI and NBD subjects in fact had a very narrow and overlapping range of responses on this item. Many of the propositions were therefore irrelevant to the analyses except in the establishment of some hierarchical framework. Rather than lose the information on this item, it was treated similarly to the others. The median value was used to order the propositions in a manner which was chosen by at least a subset of the judges. The fact that this was not a universally accepted order distorted the analyses slightly by improving the apparent performance of the CHI subjects.

5.6.2. Classifying the Actual Responses According to the

Sequence of Practical Logic

5.6.2.1. Procedure

The actual responses made by the subjects were listed and numbered without reference to their source. Responses of the head-injured and control subjects were interspersed and not identified. Nor was there any indication given as to whether the item was part of an elaborated sequence or offered as an

isolated statement. Two judges familiar with the literature on indirect speech mechanisms then independently classified the responses according to which proposition they felt they reflected.

5.6.2.2. Inter-rater Agreement

Inter-rater agreement was acceptably high initially with only a few disagreements. Mean agreement over the eight items was initially 88 percent. All differences were resolved to the satisfaction of both judges after discussion.
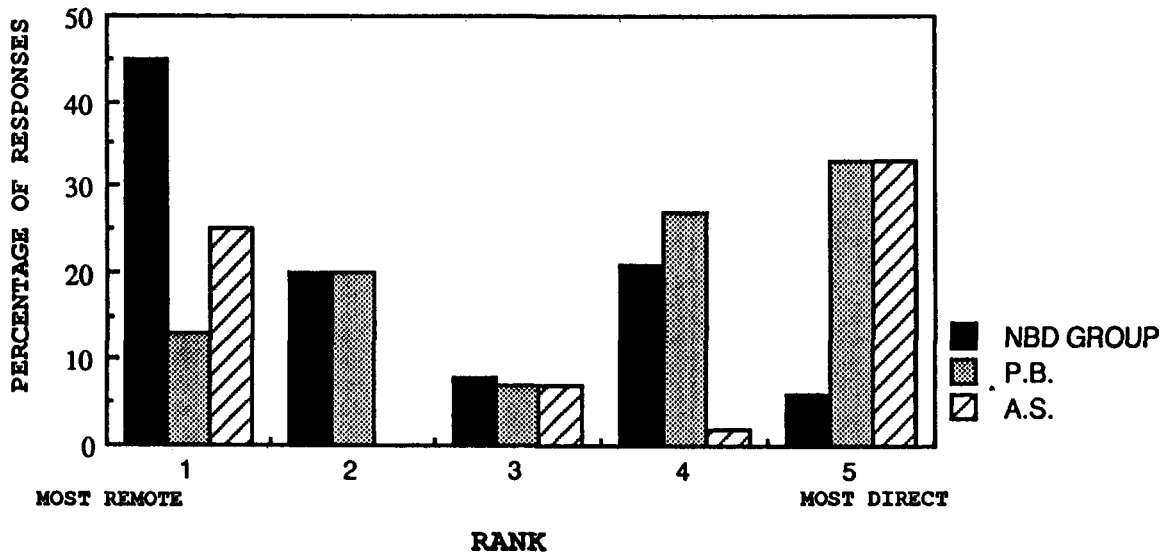
5.6.3. Results of Classification of Responses Along Dimension 1.

5.6.3.1. All Responses.

The rank each response was assigned is set out in Appendix 4. To make cross comparisons simpler, the propositions were collapsed where necessary into five categories according to their most logical affiliations. Because each scale was rank order only, this condensation process did not affect the integrity of the data.

The frequency with which the responses to all eight items were classified into propositions ranked 1 to 5, for A.S. and P.B. compared to NBD subjects, as a group, is depicted in Graph 5.1. The number of responses varied from one subject to the next. In order to facilitate comparison the frequency of responses in each rank is therefore expressed as percentage of total responses. Actual frequencies are detailed in Appendix 4.

HINTS: ALL RESPONSES

Graph 5.1. Percentage of responses to 8 items, ranked 1 (most remote) to 5 (most direct) for CHI subjects A.S. and P.B. as well as group percentages for NBD control subjects (N=12)

The CHI subjects proffered responses which corresponded to all five categories although in a distribution different from that of the control subjects. This suggests that at least to a limited extent they were able to discern and utilise aspects of the request situation that were causally distant from the required action. They did however use substantially more responses which were aimed at the actual request i.e. proposition rank 5, than did the control subjects. As an alternative means to portray this the ranks of the individual subjects' responses across items were collated. The NBD group had a mean rank of 2.2 compared to A.S.'s mean rank of 3.7 and P.B.'s mean rank of 3.5. The CHI subjects mean ranks fell outside the normal range of values (1.7 - 3.0). This difference was significant (random data t-test, 1 tailed, p<.006).
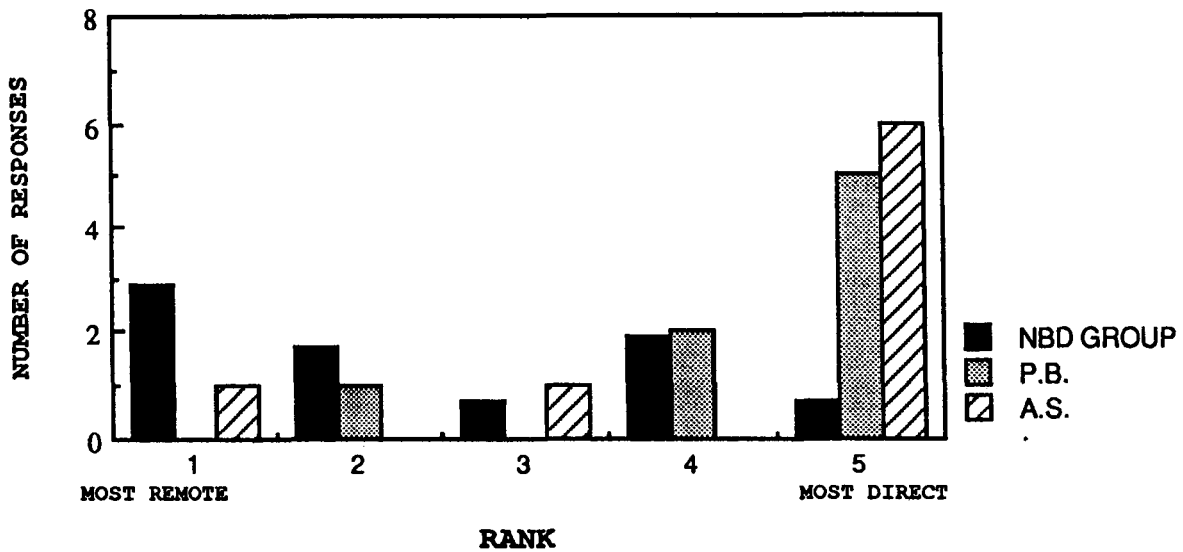
The variable number of responses offered by different subjects reflected the fact that on some occasions subjects made only one statement while on others there was a preamble leading up to the request or alternatively the request was presented in several ways. Both CHI subjects were particularly prone to generate multifaceted responses. A.S. and P.B. made on average 3.63 and 3.75 responses per item respectively compared to the average for the NBD group as a whole of 1.47. This difference was significant (random t-test p< .006, 1 tailed). This finding is not unexpected given verbal disinhibition and verbosity are characteristic of both CHI subjects. However it is important to determine whether this has a direct impact on the two subjects ability to perform the task of hinting.

5.6.3.2. Most Direct Response.

A successful hint is one which does not state its objective directly. No amount of preamble will make a hint subtle if in the end a bald request is made. In order to focus on the number of successful hints made by each subject in this sense, one response per subject was selected. This was the response which was deemed most closely related to stating the required action.

The frequency with which "most direct" responses to the eight items were assigned to the five ranks is depicted in Graph 5.2. The total number of head injured responses assigned to each category is compared to the control group's means.

HINTS: MOST DIRECT RESPONSE

Graph 5.2   Number of **Most direct** responses ranked according to propositions 1: most remote to 5: actual request, for CHI subjects (totals) and controls (group means).

The differences between responses chosen by control and CHI subjects is even more clearly apparent in Graph 5.2. The vast majority of the CHI responses closely referred to the required action whereas the NBD group referred to the required action infrequently. The difference between number of CHI responses in Rank 5 compared to NBD responses in that rank was significant (random data t-test, 1 tailed, p <.006).

P.B. made no response which was restricted to a reference to a remote premise (rank 1). A.S. managed to formulate a request which was restricted to a remote premise in only one out of the eight items. A random data t-test indicated that this difference between the CHI and control subjects was significant also (p < .01).

5.6.3.3. Least direct responses.

The above results demonstrated that the head injured subjects were unable to formulate hints which did not incorporate a fairly direct reference to the required action. This may be due to one of two impairments. Firstly this may be a result of an inability per se to generate reference to more subtle aspects of the request situation, that is an impairment of analysis and planning. Alternatively, this may reflect disinhibition, which makes it difficult to refrain from stating the desired objective, even if they were initially successful at making an adequate hint, that is it may represent an impairment of execution.

In order to investigate which of these explanations is more satisfactory, the results were re-cast by selecting the "best" response per item, i.e. the response which was classified as representing the logically most remote proposition from the actual request. This again meant that only one response per subject per item was selected. The mean number of "most remote" responses in each category for the controls is compared to the total number for A.S. and P.B. in Graph 5.3.

HINTS: LEAST DIRECT RESPONSE

Graph 5.3. Mean number of **Least direct** responses ranked 1: most remote to 5: actual request for CHI subjects (totals) and controls (group means).

Observations regarding the head injured performance cast in this manner must be speculative only, since the split distribution of responses and number of empty cells prohibits statistical comparison. The profile apparent from reference to Graph 5.3. is a mixed one. In four of the items both head injured subjects at least started their request by referring to more subtle or remote aspects of the context. In the other four, their focus was more directly related to the required action itself without any preamble about more remote parameters. The interrelationship of these two analyses will be addressed in the discussion.

5.6.4. Discussion

From the preceding analysis it is surmised that the CHI subjects had difficulty producing hints which alluded to logically prior events. This

appeared to be due to a combination of two factors. Firstly, they were impaired in their capacity to analyse the request situation in terms of the likely antecedents leading up to the desire to make the request. Alternatively, if they were able to consider this logical framework, they were impaired in their ability to exploit it to formulate effective, logically remote hints. In a sense this is a distinction between competence and performance. If subjects generate remote propositions but simply spoil their responses by allowing direct requests to intrude, they may be considered competent but not effective in performance. If on the other hand, they rarely produce remote propositions in the first place, their competence is in question. In fact, as the data in Graph 5.3 show, the subjects did seem to show an impairment of competence.

The impairments in competence demonstrated were not absolute however, since in several items both A.S. and P.B. did focus on logically prior propositions. It is interesting that A.S., who was not considered to have major difficulties in analysis, concept formation or planning per.se., was as impaired in these regards as P.B. on this task.

Secondly, they definitely exhibited problems of performance, that is impairments in the execution of their requests. Even when A.S. and P.B. managed to formulate respectable hints which alluded to some logically prior antecedent, they were unable to refrain from going on to make the request directly. This was an expected finding, given that both subjects suffer from

verbal disinhibition and reflects their known deficits in the accurate monitoring and control of verbal behaviour.

5.7. Analysis 2: Classifying Responses According to Dimension 2: How Directly They Reflected the Underlying Proposition

The hints have been shown to vary with respect to which proposition in the chain of practical logic they referred to. They also varied with respect to how directly they alluded to that proposition e.g. while some hints in Item 1 reflected the proposition that the speaker was thirsty, this could be achieved either directly: *"Jeez, I'm a bit thirsty"*, or indirectly: *"A man's not a camel"*.

5.7.1. Procedure

In order to determine how obliquely or otherwise the different responses reflected their respective propositions, raters were again utilised to make judgements of directness.

The responses were sorted into groups according to the proposition they represented. Again there was no indication given as to subject identification or whether the responses were complete in themselves or part of a larger communication. The proposition was typed at the top of each group of responses. The list of responses cast in this framework was then given to 13 judges who were asked to rate on a 5 point scale how directly each response reflected the proposition stated. A score of 1 represented the most direct reference and a score of 5 represented the least.

5.7.2. Inter-rater agreement

Inter-rater reliably was estimated by performing intra-class correlations (Yas, Gleser, Nanda & Rajaratnam, 1972; Shrout & Fleiss, 1979) on 4 items randomly selected from the 8 i.e. 3, 5, 6 and 7. The intra-class correlations are summarised in Table 5.2. ICC (3,13) is the intra-class correlation for 13 raters, when those are the only raters of interest and ICC (2, 13) is the more strict correlation in which these 13 raters are considered to reflect a sample randomly selected.

Table 5.2. Intra-class correlations of raters assessment of the directness of responses on 4 hint items

ITEM	ICC (2, 13)	ICC (3, 13)	SIGNIFICANCE
2	.56	.99	p <.005
5	.87	.92	p <.0001
6	.87	.93	p <.0001
7	.71	.80	p <.005

5.7.3. Results

5.7.3.1. Overall Directness Ratings

The judges' mean directness rating averaged across all responses for individual subjects is depicted in Table 5.3. Also shown is the total number of responses rated as relatively indirect i.e. given a mean rating of greater than 3 on a 5 point scale and the proportion of the subjects' total responses that this represented.

Table 5.3 Judges' collated mean directness ratings for responses proffered by individual NBD and CHI subjects.

SUBJECT	MEAN DIRECTNESS RATING	NO. RESPONSES RATED >3	PROP. RESPONSES >3
NBD Subjects			
BK	1.57	0	0
BN	1.87	2	.25
DM	2.76	6	.50
GW	2.29	4	.40
IS	2.62	4	.29
RF	2.08	2	.22
BM	2.20	3	.25
CS	2.04	2	.13
GL	2.05	3	.20
IN	2.32	3	.23
MH	3.08	6	.67
SM	2.16	2	.12
CHI Subjects			
A.S.	2.14	3	.10
P.B.	2.00	11	.40

There were in fact relatively few responses overall rated as indirect. Within the control group there was a total of only 37 out of the 139 responses which were considered to be indirect i.e. rated 3 or more. Of these only 7 were rated as very indirect i.e. rated more than 4. The responses given by A.S. and P.B. received mean directness ratings overall, which were within the range of that obtained by the control group. Converting the individual mean ratings to Z scores confirmed that the two head injured patients were performing within normal limits in this regard. (A.S.; Z = 0.27, P.B.; Z = 0.61). The proportion of their responses which were rated as indirect was also in keeping with the range seen for the NBD subjects.

5.7.3.2. Directness Ratings Within the Different Ranks.

It was of interest to determine whether the directness of the response varied systematically depending on how logically close it was in its reference to the required action. In order to do this, the mean directness ratings were compared for responses in the five ranked categories, from 1: logically remote proposition, through to 5: required action. These directness ratings are depicted in Table 5.4. In Table 5.5 the number of responses rated more than 3 i.e. relatively indirect, and the proportion of all responses in each category this represented, is shown for NBD and CHI subjects.

Table 5.4. Judges' collated mean directness ratings for responses proffered by NBD subjects as a group and CHI subjects in categories 1 to 5.

CATEGORY	1 (REMOTE)	2	3	4	5 (ACTION)
NBD X (N = 12)	2.43	1.72	1.97	2.82	2.05
Range	1.2 - 4.1	1.1 - 2.1.	3 - 3.5	1.1 - 3.9	1.1 - 4.3
A.S.	2.66	- *	2.95	1.06	2.12
P.B.	2.74	2.14	3.19	2.08	1.38

* Missing value for A.S. is a result of the fact that none of his responses were classified into Category 2.

Table 5.5. Number of responses rated on average as more than 3 (i.e. relatively indirect) for NBD as a group and CHI subjects.

CATEGORY	1 (REMOTE)	2	3	4	5 (ACTION)
NBD X (N = 12)	0.25	0.03	0.17	0.67	0.08
Range	0 - 0.67	0 - 0.27	0 - 1.0	0 - 1.0	0 - 1.0
A.S.	0.14	0	0.67	0	0
P.B.	0.50	0.67	1.00	0.50	0

The mean "directness" of the responses offered by both A.S. and P.B. in the 5 different categories were overall within the normal range. The proportion of responses rated as indirect i.e. rated as 3 or more, for the two CHI subjects was also overall, within the normal range. P.B. did give proportionally more indirect responses in Category 2 than did A.S. or any control subject. Reference to the original material indicated that this was due to him repeating the same proposition four times in one item.

It is of interest to note that the proportion of "indirect" responses given by control subjects varied from one category to the next, with relatively more indirect responses in categories 1 and 4. A Friedman two way analysis of variance comparing individual control subjects' number of indirect responses in each category, indicated that this was not a spurious observation (X_r^2 = 229, p < .0001). This pattern was not observed for the two CHI subjects.

5.7.4. Discussion

The CHI subjects overall, made proportionally as many indirect responses as did the control subjects. The degree of "indirectness" of their responses was also in keeping with the normal range. Upon consideration this is not surprising given the findings in the study of politeness in Chapter 4. A.S. and P.B. were shown to have a normal repertoire of politeness devices, including strategies for being indirect (hedging etc.) and the competence to use them. In this study, the majority of items that were rated as **not** direct i.e items given a score of more than 1 appeared to be those which incorporated such tentativeness signals.

Even in the control group there were in fact very few responses given a high indirectness rating. 37 out of a possible 139 were rated more than 3 on the indirectness scale and only seven items out of the 139 were given an indirectness rating of 4 or more. Similarly the CHI subjects did not use this form of indirectness often. A.S proffered one response with a rating of more than 4 (Item 8) and P.B. none.

The control subjects' differential use of indirect responses in the five categories deserves comment. Category 1, representing the most logically remote proposition in each request situation was the most frequently used category by the control subjects. The second most frequently used was Category 4. Both categories also incorporated the greater proportions of indirect reference although Category 4 contained by far the most (67% compared to 25%).

It may be that the reliance on logically remote propositions is the most common way with which to approach the art of hinting and the use of indirect reference, while not essential, is used to complement this. The second more common way to hint is to focus on a proposition which is very close to the desired request which in most cases Category 4 responses represented. In this case however, it is more important that the reference to the proposition is made obliquely.

It should be noted that responses in Category 5 were made very infrequently by control subjects. All of those responses, with one exception, were relatively direct and simply represented a failure on the part of the control subject to adhere to the instruction to cast his request in a hint form.

The interaction of indirectness and logical distance of proposition was not seen in the responses of the two head injured subjects. The majority of P.B.'s responses were considered relatively indirect in **all** categories except category 5. This probably, on the whole, reflected his "negative politeness" orientation and use of tentative signals as discussed in Chapter 4. As anticipated in section 5.3., P.B. did not use metaphorical references to achieve indirectness. Neither did many control subjects so this is not significant. However the quality of some of his indirect attempts were of interest and deserve comment.

Two responses were rated as indirect due to the strategy rather than the linguistic tentativeness. However both of these were totally transparent. In

an attempted hint to remind someone of a debt he responded *"Tell them a little story about someone who loaned someone else some money".* When required to hint to his partner that he wished to go home, the strategy he described involved leaving the room, waiting for someone to notice and follow, and then ask them to convey his request to his wife. Despite the ratings these attracted, they must be considered failed attempts at indirect reference.

In contrast to P.B., very few of A.S.'s responses were considered indirect by the judges (3 out of 29), possibly due to his very aggressive, assertive style of speaking. In several of his attempts to be indirect however, he performed similarly to P.B. in his reliance on unsuccessful strategies. When required to remind someone of a debt, he resorted to the use of unambiguous hand signals to denote $20. His strategy for hinting that he would like to go home was to simply whisper the direct request.

5.8. General Discussion

The studies described in Chapters 3, 4 and 5 have focused on the expressive abilities of A.S. and P.B. when specific pragmatic demands were placed upon them. The speech of both subjects was considered normal with respect to their performance on standard aphasia assessment techniques. However, they were demonstrably impaired when they were required to adjust their communication to meet the needs of the listener. This was true whether the listener's needs were informational or social.

Both A.S. and P.B. were sensitive to the informational requirements of their explanation of the dice game. They were able to discern the salient features which were important to include and were aware of the temporal relationships between these. Nevertheless, when it was important to impart this information clearly, their utterances were found to be confusing, ambiguous, and disorganised. P.B. lost the listener with his repetitive, overly long monologue, peppered with side tracks. A.S.'s production was equally confusing due to the absence of explicit detail and failure to differentiate between relevant and irrelevant information.

While in general terms, both subjects used a normal number of lexico-grammatical strategies to make their discourse cohesive, too many of these were ambiguous. This reflected a failure to consider either the needs of the listener, or to monitor the cohesion of the discourse in progress.

The investigation into politeness revealed a differential pattern of performance also. The two subjects were sensitive to the immediate interpersonal parameters of a simple request situation in which they found themselves. They were able to analyse this accurately and select appropriate polite mechanisms to reflect their perceptions. There were however, some qualitative features which indicated that as the task became more complex or novel, their strategies became less effective.

When faced with the challenge of producing novel off-record requests or hints, their difficulties were clear. This task involved careful consideration of the

broader communication context and selection of an indirect reference. A common approach used by the NBD subjects was to refer to various antecedents leading up to the incentive to communicate. The two CHI subjects frequently failed to consider and exploit these antecedents. On the occasions that they did manage this, they were unable to limit their utterance to the indirect reference, but continued to develop the argument until they had stated their explicit intention. While they did attempt to be indirect via other strategies these were concrete, transparent and unsuccessful.

The type of difficulties A.S. and P.B. experienced as elicited on these task, have characteristics in common with their known frontal lobe impairments, although some refinement of their clinical profiles are required in the light of these findings. P.B. was able to produce a planned explanation of the dice game, the course of which was similar to some NBD subjects. His difficulty arose in monitoring his progress and evaluating it from another's perspective. A.S. appeared to produce a different kind of plan, with features in common with the other short texts. He too, however, failed to monitor and adjust his output in consideration for the other person. So, in both cases there was no apparent problem with the analysis or programming of the communication task at hand, but rather the execution and regulation.

Within the social request tasks, difficulties emerged at different stages. As with the dice game, responses to the simple polite requests indicated that both subjects had an intact sensitivity to salient features of the context, in

this case social, which were important to consider in formulating their utterances. Their analysis of the context when making off-record requests (hints) was however, more problematic.

The performance of both CHI subjects reflected frequent failure to conceptualise the request context in terms of its broader implications. This meant that their hints were restricted to reference to concrete aspects of the context and were less successful because of this. As with the dice game, deficits in execution and monitoring interfered with their ability to control their responses, and this too was detrimental to the success of their communication. So in the more demanding task of formulating hints, deficits in conceptualisation as well as execution and monitoring were apparent in both CHI subjects.

It had been established on neuropsychological assessment that P.B. had rigidity of thought processes which impaired his abstraction skills. His concrete, stimulus-bound verbal responses when required to hint was therefore predictable on this basis. It was not however, expected of A.S. given that he was not rigid and inflexible on neuropsychological assessment. Nor did he show deficits in abstraction skills on conceptual tasks given. There are two possible explanation for this discrepancy. Firstly, his focus on concrete explicit information may not reflect a failure to appreciate the inferential context, but rather his poor impulse control, which prevented him from utilising this knowledge. Alternatively, the type of task used here

required a level of abstraction which was more demanding than the routine neuropsychological assessment.

If this difficulty is one of analysis, as it appears to be with P.B., then it must be assumed that the same impairment will be present in language comprehension. The following three chapters describe studies which focused on the two CHI subjects' capacity to utilise inferences drawn from the communication context in order to comprehend the meaning of the verbal utterance, as opposed to the expressive abilities which have been the focus so far.

CHAPTER 6: ANTICIPATION OF LANGUAGE

6.1. On-Line Processing

One source of contextual information which impacts upon language comprehension, is the utterance itself. Listeners set up expectations concerning what is about to be said by their understanding of what has gone before. Psycholinguistic researchers interested in exploring speech comprehension processes have demonstrated the salience of this phenomenum using gating, lexical decision and word monitoring tasks (e.g. Friederici, 1985; Tyler, Marsen-Wilson, Rentoul & Hanney, 1988; Tyler, 1988). It has been shown on these tasks that spoken word processing is facilitated by the semantic, syntactic and pragmatic (i.e. broader semantic) context that precedes it. Conversely, inappropriate or disordered preceding context impedes the speed of subsequent processing (Marslen-Wilson, Brown & Tyler,1988; Tyler, 1985).

Tyler and Marslen-Wilson (Tyler, 1988; Marslen-Wilson & Tyler, 1980;), basing their theory on the work of Fodor (1983), have described a model of spoken language comprehension as follows. It is assumed that the speech input is mapped onto internal representations of lexical form. Once this has occurred the semantic and syntactic properties of the particular lexical representations become available for processes which construct higher level representation of the speech input including broader semantic and discourse structural features.

These higher level processes do not wait for lexical mapping of the entire utterance to occur, but continuously operate on the accumulating input to constrain the representation which is being developed.

These constraints facilitate language comprehension by restricting subsequent lexical mapping to semantically, syntactically and pragmatically possible choices. Implausible or grammatically illegal words are processed slowly in word monitoring tasks (e.g. Marslen-Wilson et.al, 1988, Tyler, 1988), presumably because they occur counter to semantic and syntactic expectations and therefore disrupt the normal development of internal speech representation.

While some syntactic and semantic constraints operate between adjacent lexical items or within the organisation of the clause, other semantic and pragmatic constraints result from the larger schema of the discourse (Tyler, 1988). It follows from this model that the larger schema is developed on the basis of an accumulated interpretation of the utterance at a' sentential and supra-sentential level. This interpretation must also utilise relationships to other non-linguistic contextual knowledge. Thus the larger schema is built to a large extent on inference, some of it based on pragmatic knowledge beyond direct semantic relationships.

According to these authors the mental processes required to construct internal representations are neither conscious nor under voluntary control. They are therefore best explored using "on-line" tasks. In such tasks the

subjects' responses are monitored as they comprehend the speech output, rather than once they have completed this process. In this type of task introspection is kept to a minimum and performance reflects the stage of processing the subject has reached in their comprehension of the speech output.

6.2. Impact of CHI on Language Anticipation

The relevance of CHI and concomitant frontal lobe deficits must be considered. In the preceding chapter it was concluded that both CHI subjects have difficulty conceptualising the broader implications of the communicative context. Instead they tend to focus on immediate and concrete aspects of the situation. If this is a pervasive difficulty their capacity to anticipate language in the pattern described above might well be disrupted. They would be reliant on syntactic and concrete semantic relationships in order to construct a mental representation of the speech input. Consequently, while basic linguistic relationships may be processed, pragmatic and super-sentential contextual influences would be poorly utilised. These would therefore have little impact on their capacity to anticipate likely lexical sequelae.

In order to explore these predictions an experiment was devised which utilised the concept of on-line processing to test A.S. and P.B.'s capacity to anticipate lexical items on the basis of preceding verbal context processed pragmatically.

6.3. Pilot Study

The materials developed were initially designed to test the influence of three types of contextual cues on verbal anticipation in every day language situations. As well as the verbal context i.e. content of preceding utterance, physical context and prosodic influences were of interest. Rather than artificially creating communication samples it was decided that everyday spontaneous language would be more interesting. However, due to the technical difficulty of collecting a well organised corpus of such material, a compromise was reached by the use of "naturalistic" language samples taken from various television programs. 74 segments each lasting approximately 25 - 35 seconds, were edited from videos of common television shows. The type of programs used included the following:

News/interview	English lessons
Science/documentary	Sport
Gardening	Cooking
Soap opera	Panel discussion

Particular segments were chosen to represent differing influences of the three contextual sources. In each clip one word at the end of the segment was chosen as the target word and acoustically suppressed. The influence of various contextual cues was measured in terms of the ability to accurately guess the target word. In order to verify that particular contextual cues were being utilised, the task was given to 62 NBD control subjects, who were hospital staff and university undergraduates, under three conditions.

1. Watching the video (22 subjects)

2. Listening to an audio tape of the video (22 subjects)

3. Reading a transcript of the video (18 Subjects)

Comparison of performance across the 3 conditions revealed that 22 of the items had insufficient information to guess the target word under any circumstances. There were only 7 items which actually required the visual context (physical environment or lip movement). In each of the remaining 45 clips, 50 % or more of the subjects reading the text were able to predict the target word or a semantically related word. In a subset of 26 of these 45 clips, the target or related word was accurately predicted by 82% or more of the control subjects. These 26 clips were chosen for the study proper.

6.4. Study Proper

6.4.1. Using verbal context to anticipate a lexical target

6.4.1.1. Materials

On the basis of the results of the pilot study, a video was compiled using the 26 television segments which yielded the high prediction rates for the target word mentioned above. The target word was most frequently a noun, e.g. "street", "holiday" (21/26), but also included 4 adjectives, e.g. "wonderful", "mild" and one verb, "outraged". Description of the program type and target word for each item is set out in Appendix 5.

6.4.1.2. Subjects

A.S. and P.B. took part in this study along with the twelve NBD control subjects who had participated in the previous studies.

6.4.1.3. Procedure

Each subject was shown the video tape individually. For each item they were asked to guess what the last word might be. Items were shown a second time if the subjects wished. While this particular methodology allowed some subjects a second exposure to the language sample before making their choices it was still very much an on-line task. The video clips used were far too complex and rapid to enable subjects to ruminate about the language they had heard in any detailed fashion. As evidence of this all subjects who responded with a correct guess, responded immediately. It was only on occasions where they did not know that their response was delayed.

6.4.1.4. Analysis

On the basis of the performance of subjects in the pilot study, the responses were categorised as follows. A correct response was one which was:

    a) the exact word e.g. "wellingtons"

    b) a semantically equivalent word e.g. "gumboots"

    c) a word closely related semantically e.g. "galoshes", "shoes"

An incorrect response included vague, general terms e.g. "thing", "it", words which had previously appeared in the text but were inappropriate in that

context, semantically unrelated words or words that were grammatically inappropriate.

6.4.1.5. Results

The control subjects made, on average, 24.5 correct responses out of the 26 possible when guessing the target word. A.S. guessed 23 targets correctly and P.B. guessed 24 targets correctly. These performances were within normal limits. Furthermore, the words offered by the two CHI subjects that were incorrect were within the spectrum of incorrect responses made by the pilot control subjects. Their performance was thus considered quite normal on this task.

6.4.1.6. Discussion

A.S. and P.B. demonstrated a normal capacity to use semantic, syntactic and pragmatic relationships to anticipate likely lexical sequelae while processing language in this task. There are two relevant comments about these competent performances.

The first relates to the language processing model advocated by Marslen-Wilson and Tyler (1980). These authors presume the processes which operate on linguistic input to build an internal mental representation are nonconscious and automatic. Given that the frontal lobes appear to be more integrally involved in non-automatic processing (Shallice, 1988) it may be that these automatic processes are unperturbed by the frontal lobe pathology experienced by the two CHI subjects.

The second comment concerns the redundancy of the material used. The language in the 28 samples used in this experiment was selected because it was "naturalistic"and for this reason encompassed a wide range of semantico-syntactic and pragmatic influences over which little control could be exercised. It was therefore difficult to ascertain what specifically operated in each sample to guide the subjects to their accurate predictions of the target word. It was established that these particular samples had a very high prediction rate of the exact target word with the pilot control studies. In many cases the choice may have been made in terms of knowledge of legal grammatical and/or semantic relations. More pragmatic inferential processes may therefore not have been as necessary as was first intended. A secondary measure of the CHI subjects sensitivity to the broader pragmatic interpretations of the language samples was therefore sought by requiring them to make global judgements about the content of the clips.

6.4.2. Using verbal (and visual) context to classify a program

6.4.2.1. Method

The same 28 video clips were shown to the subjects for a second time. On this occasion they were requested to decide what type of show the program might be. They were given a list of likely program types to choose from. These were the same as listed in the description of the Pilot Study.

6.4.2.2. Results

On average, the control subjects classified the program accurately 25.2 times out of 26. A.S. classified 23 of the 26 programs accurately and P.B. classified 20 of the 26 accurately. If the two CHI subjects were compared as a group to the NBD subjects their performance was significantly worse than their non-brain damaged counterparts (random data t-test, p = .011, 1 tailed). This was due however, to the performance of P.B. A.S.'s performance fell within normal limits but P.B., compared on his own to the controls, performed significantly worse (random t-test, p = .039, 1 tailed).

6.4.2.3. Discussion

These results, while not conclusive, support the finding in the previous chapter that P.B. has problems with the appreciation of the broader meaning of the communication context when processing linguistic input. On the other hand, at the level of processing that this task required, A.S. appeared as competent as the control subjects.

Qualitatively P.B.'s responses to the video clips reflected a failure to integrate the information before him. For example, he decided that a scene from a (very popular) soap opera in which a child runs across the grass yelling "*Daddy Daddy, froggy, froggy*" was a nature, animal or travel show. Unable to perceive the broader picture, he generalised incorrectly, from a specific lexical item. This failure to draw together the contextual cues probably reflects two related impairments; firstly an inability to ignore the most

salient, concrete meanings inherent in numerous aspects of the context and secondly, the inability to integrate all the information available.

The results of this study have implications for P.B.'s capacity to comprehend linguistic input in everyday situations. Being unable to accurately guess television shows may on the surface seem a trivial disability. However, as has been progressively expounded in this thesis, there are a variety of meanings imparted by both intra-textual and nonverbal contextual cues in all communication acts. Sensitivity to this range of meanings is a vital part of the act of comprehension. Some contextual meanings convey subsidiary information about the communication setting, as in the type of television program being watched. Others convey information about the social relationships between speakers as was discussed in Chapter 4. In yet other circumstances the contextual meanings are vital in order to interpret the actual pragmatic intention of the utterance itself, as in the unravelling of the meaning behind a hint.

The findings of this study have indicated that at some level, P.B. was not comprehending meanings imparted by the broader communicative context. Therefore, not only is he is at risk of failing to appreciate subsidiary contextual meanings, but of even greater significance, he may fail to comprehend primary pragmatic implications of utterances. These issues will be pursued in the following two chapters.

CHAPTER 7: UNDERSTANDING INDIRECT SPEECH ACTS

7.1. Indirect speech act theory.

In Chapter 4, politeness theory was reviewed. This included a discussion of the motivation behind indirect speech acts and the different types of meanings conveyed by them. The process by which the conversationally intended meaning is derived from the literal meaning is the particular interest of this study.

While the literal meaning is manifested in the linguistic form of the utterance, the intended meaning is derived from a combination of aspects of the utterance and the context in which it is said. Some theorists (e.g. Gibbs, 1982) argue for a single stage process where the implied meaning is processed automatically, bypassing the literal meaning. According to this model the literal meaning is treated idiomatically. However, it is unlikely that this model is adequate. As was discussed in Chapter 4, empirical evidence indicates that the literal meaning of indirect speech acts is not frozen, even in highly conventional forms, but continues to play a role in the communication (Clark & Lucy, 1975; Clark & Schunk, 1980).

Other models have been developed to explain derivation of the inferential meaning of indirect speech acts. (e.g. Gordon & Lakoff, 1971, 1975; Searle,1975)) which have assumed several steps:

1. the literal meaning is comprehended;

2. some cue indicates this is not sufficient;

3. inferential rules are implemented in order to derive the intended meaning from the literal meaning and from the context in which it occurs.

Grice's conversational cooperative principle (1975) has been considered basic to step 2. (Searle, 1975). The rules by which the inference is derived however vary from one theorist to the next (see Levinson, 1983). More recently it has been argued that interpretation of indirect speech acts may not occur in this fixed step-like fashion at all, but in a more complex interactive manner (Clark, 1979, Sperber & Wilson, 1986).

The debate regarding the various models of processing of indirect speech acts and the empirical studies devised have mainly focused on normal comprehension. There are also however, some experimental studies which have focused on the capacity of brain damaged subjects to process indirect speech acts.

7.2. Clinical studies of comprehension of indirect speech acts

There are three significant studies that are relevant. Hirst, Le Doux & Stein (1984) reported a clinical experimental study in which they explored the dissociation between comprehension of literal and non-literal meanings of indirect speech acts. Five anterior aphasic subjects, five right hemisphere (temporal or parietal lobe) damaged subjects and 10 normal controls had to determine the appropriateness of responses to direct speech acts ("Can you play tennis?") and indirect speech acts ("Can you pass the salt?") as depicted on video. Each type of speech act was followed by one or other of two

alternative responses, a verbal response "yes" or "no" or an action. The action was an appropriate response to the indirect speech act (the request) but not for the direct question. The verbal response, was appropriate for the direct speech act but not the indirect.

The researchers found that the normal controls could match all questions to the appropriate responses. While aphasic subjects were accurate in their discrimination between appropriate and inappropriate responses to the indirect speech acts they were unreliable in judging responses to the direct. The interpretation given by these authors was that the anterior aphasic patients had retained their capacity to attend to contextual cues and were able to use these to derive the pragmatic implications of the indirect speech acts. Their ability to comprehend language (which was restricted to individual words), was sufficient to cue them into the communicative intention of the indirect speech act but not the direct. These authors argued that the anterior aphasics performance was evidence for a single stage processing model in which the pragmatic meaning is interpreted directly, independent of the literal meaning. This explanation is not altogether satisfactory however, since the authors also observed that the aphasics subjects were comprehending meaning (presumably literal) of individual words within the utterance.

Alternatively the performance of the aphasics fits in with the more complex processing model described by Clark (1979) in which both literal and non-literal meanings are derived in a complex way, from a variety of contextual

and linguistic sources. Even if the nature of the request is self evident from the context and one key word in the utterance and is therefore the first meaning derived, the literal meaning will still be required in order to verify the accuracy of the perceived meaning. The aphasics in Hirst et al.'s study were not 100% accurate in their appraisal of responses to indirect speech acts unlike the non brain damaged controls. This inaccuracy gives credence to this latter interpretation.

In the study by Hirst et al. (1984) the RH subjects were found to be able to make appropriate judgements for the indirect speech acts but chose inappropriate actions to direct questions (e.g. waving a tennis racquet around the lounge-room in response to the question "Can you play tennis?"). The explanation given by the authors was that the RH subjects had lost their "world" script knowledge by which to judge the appropriateness of behaviour. In another study, Foldi (1987) used a similar indirect speech act task with 10 aphasic, 10 normal and 10 right brain damaged subjects. In this study the stimuli were pictures rather than videos and the material incorporated a larger range of indirect speech acts than simple "can you..." questions. In direct contrast to Hirst et al. (1984), Foldi found that the RH subjects preferred literal responses to indirect requests rather than the more appropriate pragmatic response. She did not include a comparable direct speech act task.

A third study (Weylman, Brownell, Roman & Gardner, 1989) investigated the ability of 14 RH subjects to interpret direct and indirect speech acts when the

preceding context was verbal only. Their findings fell somewhere in between the previous two. The RH subjects chose more indirect than literal interpretations for the indirect speech acts, however this was proportionally fewer than the controls.

Foldi (1987) entertained a number of hypothesis regarding the problem experienced by the RH subjects including the idea that right hemisphere damage may lead to a failure to integrate all the cues in the communicative context and to weight them appropriately. However an alternative interpretation in terms of frontal lobe function may also be entertained.

Foldi's experiment (1987) incorporated a group design in which five patients had parietal or temporo-parietal lesions, two had fronto-temporal damage and three had massive lesions of the entire middle cerebral artery territory (frontal, temporal and parietal). The study by Weylman et al. (1989) also incorporated a heterogenous group of RH subjects. There was no localising evidence for 2 subjects and of the remaining twelve, four' had primarily posterior damage, one had primarily anterior, and seven had both anterior and posterior. Hirst et al (1984) used subjects with only parieto-temporal damage.

Comparisons across mixed groups like these are difficult. However, it may be that the differences in performance profiles of the subjects in the three studies were due to the inclusion of subjects with frontal lobe pathology in the reports of Foldi (1987) and Weylman et al. (1989) but not in that of Hirst

et al. (1984). At least half of the subjects in the two former studies had known frontal lobe involvement and presumably suffered from various constellations of frontal lobe impairment, including the inability to inhibit concrete stimulus-bound behaviour. Consequently, some of these subjects may have been chosen literal interpretations to indirect speech acts as a frontally mediated, concrete response. This would influence the group profile in the directions reported. Unfortunately no discussion of individual patterns of performance was described so this possibility cannot be explored further.

7.3. Implications for CHI Subjects

The normal studies cited in Chapter 4, and the clinical studies detailed above raise the question as to whether frontal lobe impairment may interfere with the capacity to process indirect speech acts normally. The two CHI subjects who were the focus of this thesis might therefore also be expected to have difficulty with comprehending indirect speech acts, although individual differences would be expected.

P.B. had difficulty comprehending the broader communication context in the previous study (Section 6.4.2.). His responses on the hinting task also reflected concrete stimulus-bound behaviour. It might therefore be anticipated that he would be locked in to responding to the literal aspect of the indirect speech act. A.S. did not have as obvious difficulty as P.B. when making broad pragmatic judgements in the previous chapter. The suspicion was raised however that he too had difficulty conceptualising the communication context in broader terms when formulating hints (Chapter 5).

His capacity to comprehend indirect speech acts was therefore also of interest.

7.4. Method

7.4.1. Materials

The task described by Hirst, Le Doux and Stein (1984) was adapted for this study. Seven conventional indirect speech acts and seven direct speech acts all phrased as "Can you... " questions were generated. For each question, two responses were formulated: 1. a verbal response "yes" 2. An action e.g. passing the salt in response to "Can you pass the salt", mimicking a swimming action while sitting in the lounge room in response to "Can you swim?" . There were 28 question-response pairs altogether. These are detailed in Appendix 6.

Two actors were employed to enact the 28 speech acts on videotape. Each scene began with 30 second segment showing the two actors involved in some relevant activity (e.g. sitting reading in a lounge chair, eating a sandwich at a table). One actor would then utter the relevant speech act and the second participant would respond. The scene would then finish and move onto the next item. The order of the items was randomised prior to filming although once the video had been made this order obviously remained invariant. The actors were instructed to make their utterances as prosodically neutral as possible.
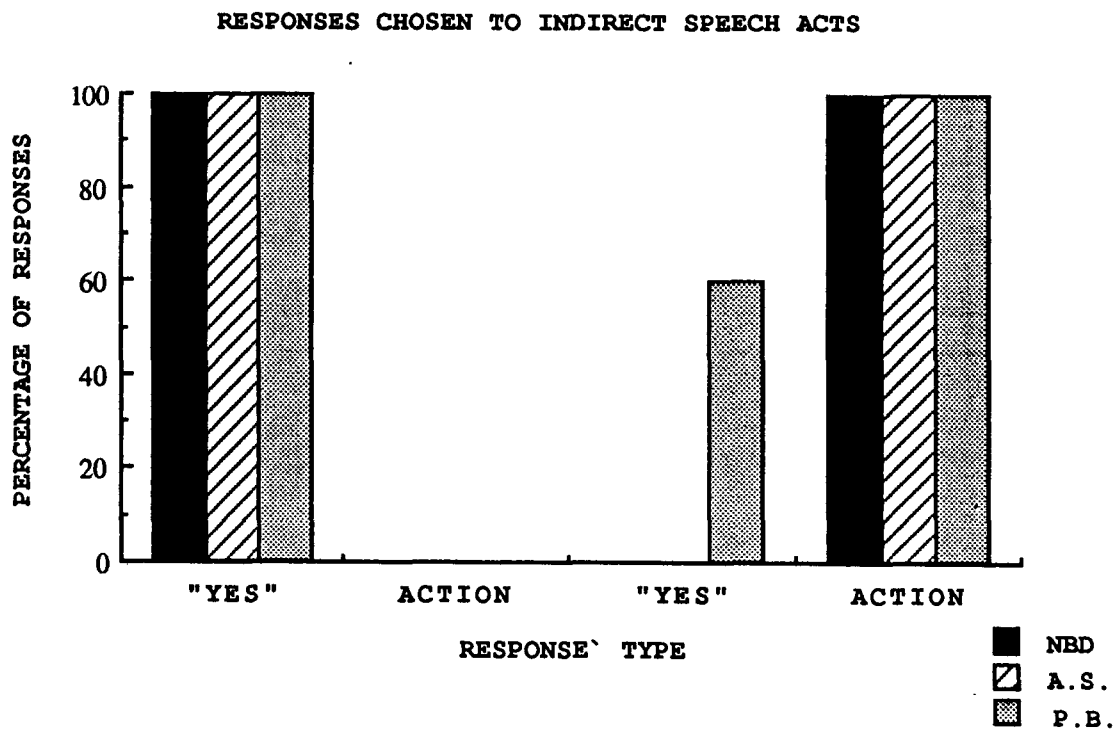
A.S. and P.B. took part in this study. 12 controls matched in age and educational background who were involved in the previous studies, also took part.

7.4.3. Procedure

The video was shown to the subjects individually and they were asked to respond simply yes or no according to whether they felt the response was appropriate to the question. As will be evident in the results section P.B. was inaccurate in some of his judgements. In order to verify that this pattern of responses was not a spurious finding, he was given the same task on three separate occasions, the second time several weeks after the first and the third occasion some months later.

7.5. Results

The proportions of responses rated as appropriate by the two head-injured subjects and twelve control subjects are depicted in Graph 7.1.

RESPONSES CHOSEN TO INDIRECT SPEECH ACTS

Graph 7.1. Proportion of correct responses to direct and indirect speech acts for NBD subjects, A.S. and P.B.

A.S. made 100 percent appropriate judgements. His performance was totally normal in this regard. P.B. however performed quite differently. He too was able to determine that an action as a response to a direct question was inappropriate (unlike the RH group in the study of Hirst et.al.(1984)). He was also 100% correct in recognising that indirect i.e. action responses to indirect speech acts were appropriate. However, in a fashion more in keeping with the RH subjects in Foldi's study (1987), he also decided that literal responses to indirect speech acts were appropriate. His tendency to select literal endings was significantly greater than that of the controls (random data t-test, p= .039, 1 tailed). Furthermore this behaviour was essentially unchanged on each of the three occasions he was tested.

7.6. Discussion

P.B.'s reaction to the literal responses to the indirect speech acts was consistent over three testing sessions. On occasions when he inappropriately chose the literal response, he was asked why he had made this choice. Sometimes after discussing it further he would change his mind in the appropriate direction (although only his initial responses were scored). However, he would repeat the same mistake on his next exposure to the video.

P.B. was aware at one level that his choices were inappropriate, even stating on one occasion that it was odd that there were two correct endings to the requests. He was, however, unable to use this information to modify his interpretation. While he perceived and would even discuss the pragmatic considerations of the video clip, e.g. *"Well, she has her hands full and needs him to open the door"*, he would insist that the literal answer was correct. His explanation regarding the anomalies he perceived was that he/she had asked the wrong question, or that alternatively the respondent 'was correct in responding to the question the way he/she did, but should have also responded to the "body language". However, when he was pushed for a single answer he would repeatedly decide that overall the literal response was correct.

P.B. clearly demonstrated that he was processing the literal meaning of the indirect speech act. It is assumed that A.S. and the control subjects were too, since they were 100 percent correct in their discrimination between direct

and indirect speech acts. All subjects, including P.B. also demonstrated an understanding of normal pragmatic interpretations of common and conventional indirect speech acts. The sole dimension in which P.B. differed was his inability to reject a literal response to an indirect request even when this was patently absurd.

This behaviour is similar to that described by the RH subjects of Foldi's study (1987) some of whom had frontal lobe lesions. Foldi's hypothesis was that preference for literal responses may reflect a failure to integrate all contextual information and/or to order these into an appropriate hierarchy. This hypothesis is still considered valid but may be best perceived as reflecting disturbance to frontal lobe integrative processes rather than disruption to the functions of the right hemisphere in general. In terms of Clark's 1979 model it is postulated that P.B. is able to use pragmatic and contextual cues to derive the intended meaning of the speech act. He is also able to process the literal meaning. What he is unable to do is use the contextual information to reject the literal meaning as not being intended seriously.

7.7. Conclusion

Both CHI subjects were able to interpret the indirect meaning of the speech acts used in this study. Analysis of these speech acts reveals that there were in fact several compatible sources of information from which the indirect meaning could be derived by the CHI and NBD subjects. Firstly, the relationship between the pragmatic and the literal interpretation was in fact

quite close. "Can you pass the salt" refers to ability rather than the request itself but nevertheless includes a mention of the required action ("Pass the salt").

The speech acts, by their conventional nature, were almost "transparent" in their intended meaning. Furthermore, both CHI subjects would have undoubtedly used and responded to just such expressions on numerous occasions throughout their lives. Consequently NBD and CHI subjects alike, could mobilise "old knowledge" to aid their interpretation. Thirdly the context supported the pragmatic interpretation by offering an independent source of verification.

In some conversational implicatures such redundancy of information does not occur. The implicature may be non- conventional and its literal meaning may have no bearing on its intended message. The context alone may also not be sufficient to anticipate the remark. Different types of conversational implicatures can thus be created that increase the tension between the literal meaning and the meaning the context conveys.

One such implicature is the communication of irony, where the gap between what is patent in the environment and what the comment is about is so great that the comment can only be interpreted as having the opposite force from its literal meaning. Understanding this type of implicature thus requires more pure pragmatic reasoning than does conventional indirect speech acts. The CHI subjects may therefore be required to mobilise a different set of

comprehension processes. In the next chapter the CHI subjects' ability to comprehend irony will be explored.

CHAPTER 8: UNDERSTANDING SARCASM

8.1. Theories of Irony

Sarcasm and verbal irony have been discussed at length in the classical literature, but only more recently have received attention by psycholinguistic theorists (e.g. Grice 1975, 1978; Sperber, 1984; Sperber & Wilson, 1981, 1986; Jorgenson, Miller & Sperber, 1984; Clark, 1982; Clark & Gerrig, 1984, Williams, 1984; Gibbs, 1986; Gardner & Winner, 1985; Slugoski & Turnbull,1988; Kruez & Glucksberg, 1989). Irony is defined as "a form of speech in which one meaning is stated and a different, usually antithetical, meaning is intended" (Preminger, 1974, p. 407, as cited in Sperber 1984). Sarcasm is usually defined as a form of verbal irony used in a hurtful or critical way. "Positive sarcasm" has also been included in recent discussions but is perhaps most aptly referred to as "banter" (Slugoski & Turnbull, 1988).

Ironical meaning, like that of indirect speech acts, is communicated indirectly. The relationship between the literal and intended meaning is however different in the two forms of conversational implicature. The implied meaning of the indirect speech act can be perceived as being logically or causally related to the intended meaning e.g. by referring to the felicity conditions underlying the required request (Gordon & Lakoff, 1975). Ironical meaning on the other hand is commonly (although not always) the antithesis of the stated meaning.

Grice's conceptualisation (1975) was that ironical statements transgressed the Maxim of Quality, i.e be true. The listener, realising from the context

that the remark is patently at odds with the known facts and assuming that the speaker is adhering to the Cooperative Principle, forms a conversational implicature and replaces the literal meaning with another, in many cases its opposite. This model was chosen as a useful one for the purposes of the following study. There have been however, recent alternative theories developed to explain sarcasm. It is therefore pertinent to review these briefly to indicate why they were considered less appropriate.

The two-level interpretation model, like that mentioned earlier that dealt with indirect speech acts generally, has come under attack in recent debate (Sperber & Wilson, 1981, 1986; Jorgenson et al. 1984; Sperber, 1984; Gibbs, 1986). Preference has been given to a single-stage "echoic mention" model in which a sarcastic remark is meant literally as an "echo" of a proposition previously stated, or thought, by someone else. Speakers echo that proposition but by doing so they also impart their derogatory attitude towards it. According to this model the speaker's attitude is crucial and logically prior to the appreciation of the sarcastic intent.

This model is not universally plausible nor well supported empirically. Studies which have tried to manipulate "echoic" precedents (Jorgenson et al.1984; Gibbs, 1986), have removed all context that could make the ironic utterance meaningful in any obvious sense. Furthermore an attempt to invalidate the two-stage theories by reaction time measurements (Gibbs, 1986) has yielded inconsistent data from one experiment to the next. One

study which presented empirical evidence for a modified view of the "echoic model" (Kruez & Glucksberg, 1989) none-the-less concluded that:

"when a statement is obviously counterfactual to both speaker and listener, then this seems to be sufficient to prompt at least a suspicion of sarcastic intent." (p.382)

In defence of more elaborate theories Kruez and Glucksberg (1989) correctly pointed out that the Gricean model does not explain the **motivation** to use the sarcastic form of utterance. This is true but is not relevant to this enquiry. While conveyance of an attitude has been shown to be intimately associated with the generation of sarcasm (Gardner & Winner, 1985: Slugoski & Turnbull, 1988), it is not the mechanism by which it is interpreted. As observed by Williams (1984) and demonstrated by Kruez and Glucksberg (1989), what is necessary and sometimes sufficient, is the juxtaposition of two or more incompatible elements. The two-stage theory thus remains the most parsimonious to explain the mechanism by which sarcasm is detected.

8.2. Relevance of irony theory to CHI.

According to Grice's model of sarcasm, appreciation of the context is crucial in order to recognise an insincere comment. Unlike indirect requests, most sarcasm is non-conventional and therefore more context specific (Clark & Gerrig, 1984; Levinson 1983). Conventional wisdom and prior experience will not aid interpretation of the novel sarcastic remark. Therefore if A.S. and P.B. had success in the interpretation of indirect speech acts in the previous study because they were able to rely on "old knowledge", they might be expected to have much greater difficulty with sarcasm.

Furthermore appreciation of sarcasm, according to this model, requires appreciation of two disparate pieces of information: the meanings imparted by the context, and the literal meaning of the remark, neither of which is sufficient on its own to convey the intended message, and both of which are antithetical to each other. The resolution of this disparity requires deciding that one or other piece of information must be reconsidered. The literal meaning of the sarcastic remark must then be suppressed and a new meaning inferred which, while more consistent with the context, is opposite to what was initially understood.

Thus the comprehension of irony, requires greater pragmatic skills in comprehension than the CHI subjects have so far been required to exercise. P.B. has demonstrated deficits in conceptual analysis in a number of tasks given, in both the expressive and receptive realms. While A.S. has fared better in the receptive tasks so far completed, he too has demonstrated an incapacity to utilise the more abstract features inherent in a communication setting when required to produce hints. He responded in that case to immediate and concrete parameters of the situation. It was not clear whether this reflected poor response inhibition on his part, or a difficulty at the level of conceptualisation. The following task was therefore designed to investigate the ability of both CHI subjects to resolve contextual disparity in order to comprehend a sarcastic conversational implicature.

8.3. Method

8.3.1. Subjects

The two CHI subjects A.S. and P.B. took part in this study. The twelve NBD subjects who participated in the previous studies were used as controls.

8.3.2. Stimulus Material

The stimulus material was composed of a set of items each incorporating two statements. The first statement acted to set the context. The second statement was a response to the first. There were two conditions, literally consistent and literally inconsistent pairs. In the **literally consistent** condition, the second statement was a literal response to the first e.g.

Statement 1. What a huge meal

Statement 2. Don't worry you don't have to eat it all.

In the **literally inconsistent** condition, the second statement was the antithesis of the expected response to the first e.g.

Statement 1. "What a huge meal"

Statement 2. "Don't worry there's more to come".

There was no contextual information provided as to the emotions of the speakers or the circumstances leading up to their exchange.

In order to generate the stimulus material, three common social situations were selected i.e. commenting on a person's dress, commenting on the size of a meal and commenting on the quality of a sporting event (football game). For each situation there were two alternative versions, e.g. "What a huge meal", "What a tiny meal". The resultant six statements were used as the

basis for the two experimental conditions, literally consistent and literally inconsistent sentence pairs.

For the literally consistent interchanges each of the six comments was paired with a second statement which reflected a feasible response, given the initial comment was taken literally. For the literally inconsistent interchanges the responses were reversed so that each of the six comments was paired with the literal response in the opposite sense. In this way each comment in the second condition had a response completely at odds with its literal meaning. The full list of consistent and inconsistent pairs is set out in Appendix 7.1.

8.3.3. Procedure

The subjects were interviewed individually in a quiet room with an audio tape recording all interchanges between the clinician and the subject. It was explained to subjects that they were to read some pairs of sentences which represented a hypothetical exchange between two people, "Person A" and "Person B". The first sentence represented a comment by Person A to Person B and the second sentence was Person B's response. The subjects were asked to read a pair of sentences and explain what they felt was going on between the speakers, i.e. what they were doing and what they actually meant by their respective comments. The subjects were given two practice items of literally consistent pairs before they began the items proper.

The order of presentation of the pairs were randomised although the items were presented in the same order for all subjects. Whenever subjects had any

difficulty interpreting the situation or showed a reluctance to proceed, the clinician would prompt them with extra instructions which paraphrased the original. At no stage was it indicated to the subjects either that a non-literal meaning should be construed or that the comments were intended to be sarcastic.

8.3.4. Analysis

This study generated a prodigious amount of data. The transcriptions of the responses of the twelve NBD and two CHI subjects constituted 54 pages of typed text with a wide variety of explanation. In order to quantify this, the transcriptions were given to 7 judges (trained psychologists and speech pathologists) to rate. The judges were not informed that there were any CHI or other clinical subjects in the sample. They were simply told the experiment was to investigate the interpretation of language in context. Under each item, the subjects' responses were presented in a random but fixed order. To aid the judges in their classifications, the items were reordered so that the two conditions (consistent and inconsistent) appeared together.

The judges were asked to rate individual responses according to two criteria: (i) category of response (direct, sarcastic, inadequate etc.) and (ii) adequacy of explanation. More specifically, the judges were first asked to categorise the responses given by each subject for each item according to 8 categories which were later collapsed into 4. Full details of the instructions and categories are

reproduced in Appendix 7.2. The final four categories used by the judges can be summarised as follows:

1. The response was an adequate straight-forward interpretation (Category A)

2. The response evoked an odd or extraordinary set of circumstances to explain the interaction (Category E or F)

3. The response evoked the concept of sarcasm either explicitly or implicitly to explain the interaction (Category C or D).

4. The response was inadequate, because it was only partial or incomplete, or the subject had misinterpreted the sentence or instructions, or because the subject simply could not offer an explanation. (Category B, G or H)

For each individual explanation the judges were also asked to rate the subjects' competence in proffering an explanation on a scale of difficulty from 1 (Quick and easy) to 7 (Could not do).

8.4. Results

8.4.1. Inter-rater reliability

8.4.1.1. Category Selection

Inter-rater reliability for category selection was computed by determining the number of judges in agreement regarding the preferred category for each item for each subject. Averaged across subjects this reflected 86.6 % agreement (literally consistent pairs) and 83.8% (literally inconsistent pairs). Averaged across item type, similar agreement was found (86% and 83.8% for consistent and inconsistent pairs respectively).

8.4.1.2. Difficulty ratings

Because of the ordinal nature of the difficulty ratings, intra class correlations as described by Cronbach et al. (1972) were used to calculate inter-rater agreement on this dimension. These are summarised in Table 8.1. ICC (3, 7) refers to correlation between 7 judges when these are the only judges of interest and ICC (2, 7) is the stricter case in which the 7 judges are considered to represent a random sample of judges.

Table 8.1 Intra-class correlations for raters' assessment of difficulty subjects faced when responding to consistent and inconsistent sentence pairs

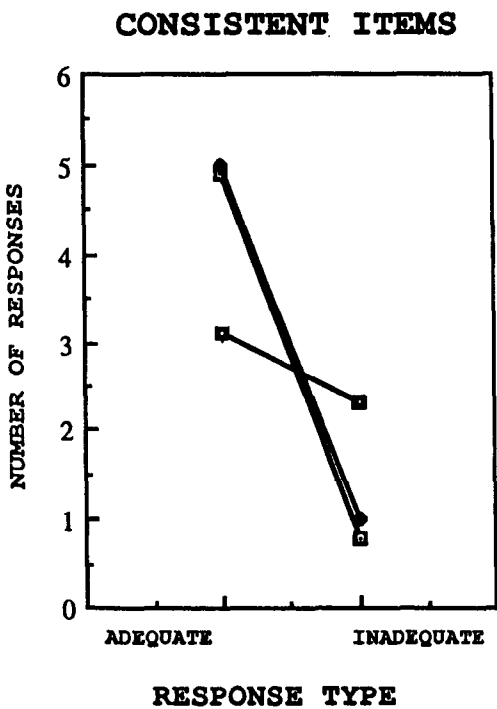| SENTENCE PAIR TYPE	ICC(2, 7)	ICC (3, 7)	SIGNIFICANCE
Consistent	.07	.311	p < .0001
Inconsistent	.35	.761	p < .0001

Intra-class correlation for the consistent items was lower although of course significant. This differentially lower correlation was not attributable to variance in judges but rather the low variability in score distribution across subjects and items. All subjects found the consistent items relatively easy and therefore the majority of responses attracted scores of 1 or 2. Intra-class correlations are depressed by low variability in actual scores.
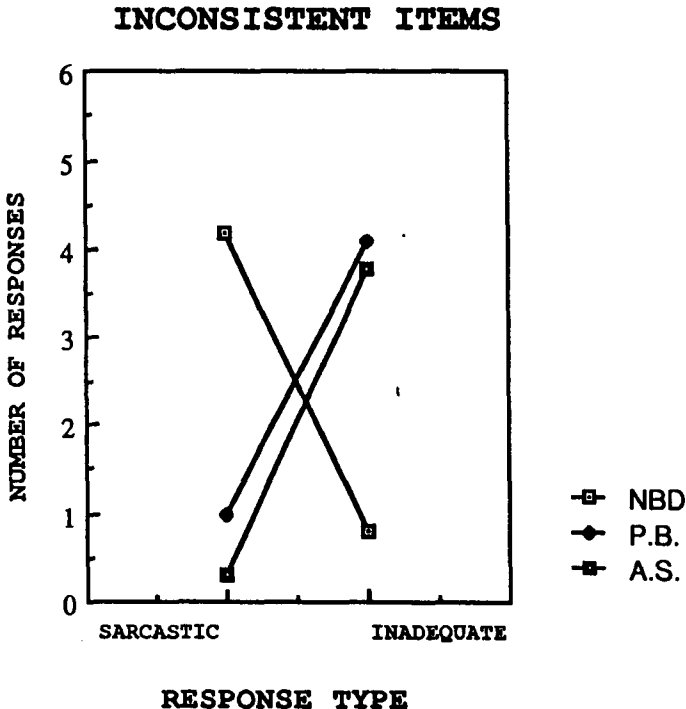
8.4.2. Comparison of category of responses

The category of "odd explanation" was used infrequently to classify responses from all subjects and will therefore not be considered further. The "adequate" category was designed to be relevant for the literally consistent sentences only and as anticipated was used infrequently for the inconsistent items.

Similarly it was expected that the "sarcastic" category would be useful for the inconsistent items only and on the whole this was found to be so. This resulted in a set of four basic types of ratings, "adequate" and "inadequate" for the consistent pairs, "sarcastic" and "inadequate" for the inconsistent pairs.

The mean number of ratings in these categories, averaged across NBD subjects and judges, are depicted in Graphs 8.1 and 8.2 along with the average number of ratings in each category averaged across judges for the two CHI subjects. Average scores for individual subjects can be found in Appendix 7.3.

CONSISTENT ITEMS   **INCONSISTENT ITEMS**

Graph 8.1. Average number of
adequate and inadequate
responses for NBD subjects
compared to A.S. and P.B.
on literally **consistent**
items.

Graph 8.2. Average number of
sarcastic and inadequate
responses for NBD subjects
compared to A.S. and P.B.
on literally **inconsistent**
items.

As can be seen in Graphs 8.1 and 8.2, the differences between the performances of the two CHI subjects and the controls in the two conditions are in expected directions. While A.S. is obviously less successful than the controls in his responses to the literally consistent sentences, all subjects scored more adequate than inadequate ratings in this condition.
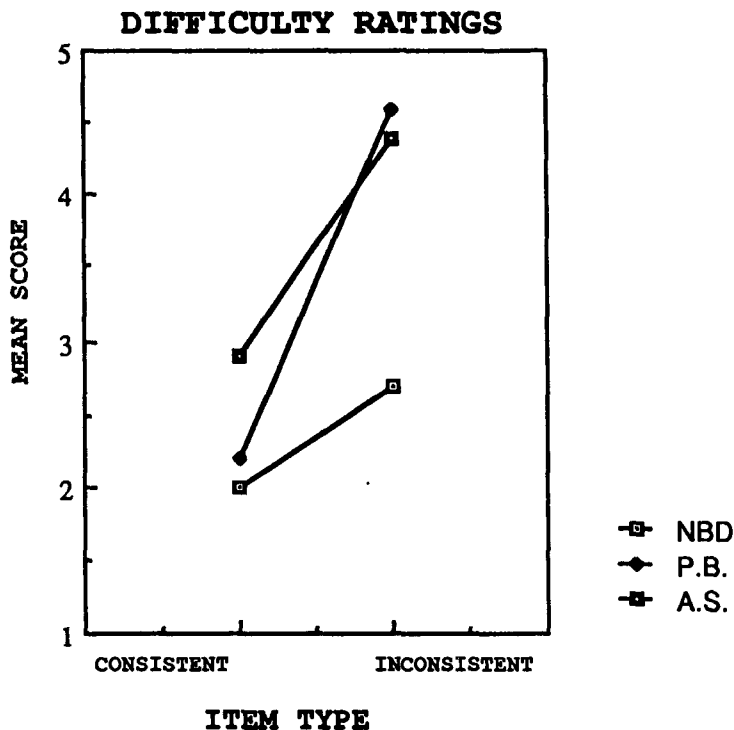
This pattern is similar for the control subjects in the second condition. They get more sarcastic ratings than they do inadequate. The pattern for the CHI subjects in this condition is however the reverse. Both subjects made many inadequate responses and virtually none which were classified as sarcastic. One judge out of the seven classified two of A.S.'s responses as sarcastic. The other judges classified **none** of his responses in this manner. According to all seven judges, P.B. managed to interpret one item only, the last one given, as being sarcastic. In contrast to their performance in the literally consistent condition and unlike any control subject, both head-injured subjects made more inadequate than adequate responses when interpreting the literally inconsistent sentence pairs.

To test the statistical reliability of these observations eight independent t-tests for planned comparisons were employed, using computerised random data permutation (Edgington, 1980). While this procedure is useful because it makes no assumptions, it should be noted that it is indifferent to the magnitude of difference between an individual score and the range of values it falls outside.

A.S. was found to have significantly fewer adequate ratings than the control subjects for the literally consistent sentences (p = 0.039, 1 tailed). He also had more inadequate responses than controls in this condition (p = 0.039). P.B.'s performance was within normal range in both respects. Both subjects were found to have made significantly fewer "sarcastic" responses than controls (p = 0.039, 1 tailed, in both cases) and significantly more inadequate responses (p = 0.039, 1 tailed, again in both cases).

8.4.3. Difficulty ratings

The degree of difficulty the subjects experienced in providing an explanation, as reflected in their scores on the 7 point "difficulty" scale is depicted graphically in Graph 8.3. The mean scores of the control subjects as a group averaged across the seven judges, is compared to the judges' mean ratings of A.S. and P.B. individually. Individual mean scores of the control subjects can be found in Appendix 7.4. High scores indicate that subjects were experiencing difficulty in explaining the items.

DIFFICULTY RATINGS

Graph 8.3. Mean difficulty ratings for NBD group compared to A.S. and P.B. on the **Consistent** and **Inconsistent** items.

These patterns of difficulty echo the findings above. All subjects found it harder to explain the relation between the literally inconsistent items, but this was greatly exaggerated for the CHI subjects. P.B.'s ability to do the task was within normal range on the inconsistent items but was poorer on the inconsistent items (t-test, random distribution, p= 0.039, 1 tailed). A.S. was also no different from the controls on the consistent task. Unlike P.B. however, he was also found to be within normal range on the inconsistent items. Before drawing conclusions from these outcomes it is necessary to report that these statistical findings were compromised by the performance of one control subject. This subject's average "difficulty" rating on the consistent

pairs was 3.6 and lay well outside the range for the other control subjects (1.5 to 2.4). Similarly, the difficulty with which he comprehended the inconsistent pairs was estimated at 4.4, again outside the range offered by the rest of the control group (1.3 to 3.7). This subject performed in a way which was qualitatively different to the other controls in all respects. He had great difficulty grasping the nature of the task, had trouble following the instructions and became highly anxious about proffering responses to even the literally consistent sentences. He often failed completely to provide an explanation to the literally inconsistent sentence pairs. At the same time he provided more "sarcastic" responses than either CHI subjects. Further evidence for his distinctive profile came from subjective impressions of the judges. When the judges had completed their ratings they were informed that two of the subjects were CHI and asked to look over the responses and choose the three most likely contenders. The two CHI subjects were picked on every occasion as was this particular control subject. The reason for his qualitatively different performance is open to speculation only. Had his data not been included, A.S.'s difficulty ratings would have also been higher than the NBD range.

8.5. Discussion

A.S. and P.B. did not on the whole have difficulty interpreting the meaning of an interchange when it reflected the literal interpretation of each sentence within the pair. This was evident in their relatively high proportion of adequate responses.

Despite this A.S. was found to have significantly fewer adequate and more inadequate responses than the control subjects. This has probably less to do with his inability to understand the items per se. than his inability to refrain from making extraneous, disinhibited remarks. For example, when asked to explain the sentence pair A: "What a horrible dress", B: "How rude", A.S. became caught up in a tangential explanation which went on to predict a possible next comment.

"... they can say who are you to start saying how rude I don't know could be rude at you.... I haven't even said the next thing yet, have I? .... wears pink underpants now....".

While the judges were not initially informed that there were CHI subjects in the sample, several spontaneously commented on the peculiar phraseology and irrelevant comments made by A.S. In contrast, P.B. responses to the literally consistent sentences were quite unremarkable in terms of both the proportion of adequate responses and overall level of perceived difficulty.

The performance of the control subjects in response to the conflicting sentences were in keeping with the earlier prediction that the presence of two contrary pieces of information is sufficient to elicit the interpretation of sarcasm.

In contrast to the performance of the normal subjects, both CHI subjects were impaired in their capacity to interpret contrary statements as conveying sarcasm. They were in fact very unlikely to register sarcasm at all and their

responses on the whole reflected an incapacity to resolve the conflict between the literal meanings of the two comments.

A.S.'s performance on this task confirmed that he is unable to respond to novel communication contexts in an adaptive way. Firstly, as his performance on the literally consistent items indicated, his poor impulse control resulted in constant intrusive references which are tangential and concrete in their associations. This behaviour reduced his apparent capacity to do the task. Secondly, in contrast to expectations generated from his performance on neuropsychological assessment, he was rigid and concrete in his analysis of novel communication contexts. Consequently he failed to appreciate the inferential relationship between two disparate pieces of information and failed to detect sarcasm.

P.B. performed in a manner in keeping with his performance on other comprehension tasks given. As was seen in his behaviour when asked to guess a TV program from a short clip, and when responding to indirect speech acts, he was unable to ignore specific literal meanings. As with A.S. this prevented him from appreciating the inferential connection between the contrary statement and its context. Unlike A.S., P.B. was much better able to control his verbal outflow. Thus so long as he was not required to access inferential reasoning skills, his performance was indistinguishable from the controls.

The impairments demonstrated by both CHI subjects on this task reflected a failure to integrate information and generate inferences. There are two possible explanations for this. One is that neither subject was able to inhibit the literal or concrete interpretation of the information they are faced with and this precluded considering the information in another light. The second is that, even if they were capable of inhibiting concrete thought processes, they were unable to analyse the material at a more conceptual level. Thus they fell back on the concrete interpretation. It is not possible to make a choice between these alternatives on the basis of the results of the sarcasm findings.