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Eliciting Clinically Relevant Information: The Effect of Interview and Beliefs.

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Abstract

Collecting good quality information is an essential part of clinical interviewing. With this in mind this thesis aimed to explore some of the methods by which information can be collected from third-parties concerning incidents of challenging behaviour. Following on from this, by drawing upon theoretical principles of memory (i.e. schema theory) the thesis also considered how interviewee beliefs about challenging behaviour could influence the quality of information elicited. Then by drawing upon evidence from the psycho-legal domain (i.e. the Cognitive Interview) the possibility that the quality of information elicited from clinical interviews could be enhanced through the modification of current clinical interview methods was considered. Building upon some of the issues raised within the review section of this thesis, the empirical paper sought to explore the effects of such modifications and of interviewee beliefs about behaviour, upon the quality of information elicited from a clinical interview. Results indicated that the modification of current clinical methods was responsible for an enhancement in the quality of information elicited. However, in contrast to expectations, beliefs about behaviour were not found to influence the quality of recollections.

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Clinical Interviewing: Some Issues for Consideration

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Abstract

Collecting good quality information is an essential part of clinical interviewing. With this in mind, this review has three central purposes. Firstly, it aims to explore some methods by which information can be collected from third-parties concerning incidents of challenging behaviour. This is done by drawing upon general aspects of clinical interviewing, such as the importance of rapport, questioning and interview structure and then by exploring some of the more specific methods available which occur as part of a functional assessment. Through this process a number of limitations within current methods are presented. Secondly, the paper considers how interviewee beliefs about challenging behaviour may influence the quality of information elicited. Specifically, while much research has considered the importance of staff beliefs upon attributions and understanding of challenging behaviour, no research has explored how staff beliefs may influence the quality of information elicited during a third-party interview. Drawing upon some theoretical principles of memory the paper provides evidence that suggests this may be an omission from the literature. The paper then draws upon evidence from the psycho-legal domain, which suggests that the information elicited from clinical interviews could be enhanced through the incorporation of victim and witness interview techniques (i.e., the Cognitive Interview) that have proved beneficial in the forensic arena. Finally, during this phase of the review, the paper draws attention to the importance of a comparative control condition, which any research concerning the modification of interview methods within the clinical setting would be wise to consider.

1 Introduction

Creating and implementing clinical interventions for individuals with learning disabilities who are experiencing difficulties is an area of clinical psychology that has received much attention (Emerson, Hatton, Bromley, & Caine, 1998; Stenfert-Kroese, Dagnan, & Loumidis, 1997; Sturmey, 1996). Of central importance to this process is the collection of accurate and detailed information concerning an individual's behaviour from which formulations and interventions can be implemented (Emerson, 2001; Emerson, et al. 1998; Hewett, 1998; Oliver, et al 2003).

However, as individuals with a disability may not be able to provide the required information themselves, it is important to consider the ways in which clinical information elicited from third-party informant based interviews could be enhanced. Clearly, if the quality of initial assessment information can be improved, it is likely that the quality of subsequent interventions can be enhanced.

Indeed, over thirty years ago Lazarus (1973) noted that "inadequate assessment is probably the greatest impediment to successfully therapy" (p. 407) with Morganstern (1988) similarly noting that while "thorough assessment is essential to ensure maximal treatment efficacy" (p. 53), it is the area most often ignored. While these two quotes are concerned primarily with first-party assessments, they have clear relevance to assessments derived from third parties. That is, successful interventions require good quality information, regardless of the source of the

information. However, as Sturmey (1996) notes, the importance of good clinical interviewing is a somewhat underemphasised and neglected area within the empirical literature.

Thus the aim of this review is to firstly explore some current methods by which information is collected through clinical interviews. Secondly, the paper will explore how beliefs about challenging behaviour, held by the interviewee, may influence the quality of information elicited. Thirdly, the paper will draw upon evidence from the psycho-legal domain, and explore the possibility that information elicited through clinical interviews could be enhanced through the incorporation of techniques that have proved beneficial in the forensic arena (i.e., the Cognitive Interview). Finally, during this end phase of the review, the paper draws attention to the importance of an adequate control condition, which any research concerning the modification of interview methods within the clinical setting may need to consider.

Before we embark upon this endeavor, two important points must be noted. Firstly, it is not the intention of this review to evaluate the efficacy of specific clinical interview techniques in isolation, or as part of functional assessment procedures, or to critically review the efficacy of functional analysis per se. Secondly, it is not this review's aim to advocate the interviewing of third-parties at the expense of interviewing the individual themselves. Indeed while third-parties can provide useful descriptions of observable behaviour, they cannot provide information concerning the

individual's own thoughts, beliefs or feelings. To ignore the individual him/herself as a source of information, may prevent a full assessment of the individual and his/her difficulties being made (Moss, Ibbotson, Prosser, & Goldberg, 1996; O'Neill, Horner, Albin, Storey, and Sprague, 1990).

2 Clinical Interviewing: Some Principles and Guides

A number of texts (Emerson, 1998a; Kirk, 1989; Prosser & Bromley, 1998; Sturmey, 1996; Sturmey, 1991) are available to guide a clinician in the most effective ways to conduct a clinical interview. While the major focus of these texts is on first-party interviews, they do provide some guidance on collecting information from third parties. Indeed Sturmey (1996) and Kirk (1989) both note that while different forms of interviewing may differ in their aims and format, the techniques themselves remain constant.

A key aim of the interview is to identify target behaviours, generate hypotheses, guide subsequent assessment and ultimately to assist in the creation of interventions (Sturmey, 1996). In order to achieve this, within the context of the interview, the interviewer needs to demonstrate a number of skills and use a variety of techniques (i.e., demonstrate good interviewer behaviour). Sturmey (1996), for example, stresses that the interviewer must be able to establish a rapport with the interviewee where trust and empathy are demonstrated. The interviewer must also be able

to guide the interviewee to the relevant information, but not lead them to the 'desired' answer. Additionally the interviewer, although guided by a hypothesis or hypotheses, must not allow this hypothesis to unduly influence the information elicited. Finally, the interviewer must be aware of the questions they ask and how these impact upon the quality of information elicited.

2.1 The Importance of Rapport in Third-party Interviews

Feelings of anger, annoyance, fear, frustration and despondency may all result in response to an individuals' challenging or self-injurious behaviour (Bromley & Emerson, 1995; Hastings & Remington, 1995). With regard to third-party interviews, Sturmey (1996) notes that rapport is particularly important as the factors outlined above may influence the full disclosure of information, particularly if the interviewee is engaging in ineffective or counter productive strategies, or in a way contrary to an agreed intervention (Bromley & Emerson, 1995; Hastings & Remington, 1995).

Dagnan, Trower, and Smith (1998) found that when individuals exhibiting challenging behaviour are perceived as capable of exerting control over their behaviour, staff are more likely to become angered and engage in coercive strategies of control. At other times, staff members' reaction to the behaviour may be to avoid or escape the situation as opposed to managing it (Hastings & Remington, 1995). It is possible that the admission of such feelings and reactions will only occur in instances

where a strong and supportive rapport has been established and that without this rapport, interviewees will self-edit the information they give. Even then however, the information elicited may remain selective due to demand characteristics, where responses may be more socially desirable and "acceptable" than factually accurate (Kemp, Miltenberger, & Lumley, 1996).

Similarly, Kirk (1989) notes that other people's beliefs, responses and coping strategies are important components to understanding the dynamics of individuals' behaviour. Indeed within the learning disabilities domain, the circular interplay between challenging behaviours on the one hand and staff behaviours and beliefs on the other has been well documented (Hastings, 2002; Hasting & Brown, 2000; Hasting & Remington, 1994a; Hasting & Remington, 1994b; Oliver, 1995). Again, it is likely that in situations where carers' reactions are inconsistent, negative, punitive or coercive, a strong and trusting rapport will be needed before such responses are revealed by an interviewee.

Finally, as the negative emotions associated with challenging behaviour may impact upon carers' psychological well being and their subsequent interactions with those in their care (Hastings, 2002; Mitchell & Hastings, 2001), a good rapport could also prove therapeutically beneficial if it allows them to express their thoughts and feelings about the behaviour with a trained professional within a safe and supportive context. As well as fulfilling a legal requirement, Hastings (2002) notes that reducing staff

stress, burnout and high turnover may increase staff efficacy, which is likely to feed into the quality of care an individual receives and correspondingly reduce the occurrence of challenging incidents. It is therefore interesting to speculate on the effect on assessment, if rapport within the interview was extended to include exploration of staff feelings, anxieties and concerns regarding the incident in question. Thus, not only is a rapport advantageous for engagement with the assessment process, but it may also serve a role in staff welfare.

In order to achieve this, techniques familiar to all practicing psychologists in creating therapeutic relationships could be incorporated in the interview process. These techniques include acceptance, validation, reflection, paraphrasing and active listening, which are commonplace within the clinical literature (e.g., Egan, 1998; Patterson & Reynolds Welfel, 2000; Rogers, 1965). However, for such an extension of rapport to be effective, it must be remembered that a good rapport is not simply created at the beginning of an interview and then forgotten. Instead, while the seeds of rapport are sown at the beginning of the interview, constant attention is needed to cultivate and maintain its development. We will now turn our attention to the ways in which interviews can be conducted.

2.2 Specific Interview Techniques

Interviews can be conducted through either an unstructured or semi-structured format (Sturmey, 1996). Unstructured interviewing (Turkat,

1988) follows no predetermined structure and is driven by a hypotheses which the clinician uses to interpret the elicited information and to guide the focus of the interview. This type of interview as well as being difficult to define and learn, places great demands on the interviewer (Sturmey, 1996) and may be susceptible to confirmatory bias whereby information supportive of the hypotheses is sought at the expense of information which disconfirms the hypotheses (Rock, Bransford, Maisto & Morey, 1987).

In contrast, semi-structured interviewing (Morganstern, 1988) has the advantage in that it provides the interviewer with a flexible framework in which key information can be sought regardless of an interviewer's own hypotheses. Frameworks within this type of interview typically cover identification and description of the problem behaviour, its history, an exploration of maintaining factors, and a description of current coping strategies (Sturmey, 1996). Importantly, while both methods differ in their format and approach, the way questions are asked remains consistent.

All interview techniques involve asking questions. Sturmey (1996) notes that two types of questions (open and closed) are frequently used in combination to gain detailed descriptions of behaviour. Open-ended questions elicit a wide, unstructured range of material and should be used to begin the interview. These should then be followed by closed-questions to elicit shorter more focused responses. A typical interview

procedure would therefore begin with a number of open questions and be followed by a series of more specific closed questions.

Heavy reliance upon closed-questions not only results in shorter interviewee responses, but also a possible loss of salient information that has not been elicited through use of the broader sweeping open-question format (Sturmey, 1996). In addition to these types of questions, a number of authors have indicated that long, multiple, leading, biased or value-ladened questions are best avoided if bias or inaccuracies are to be prevented (Breakwell, Hammond & Fife-Shaw, 1995; Hoinvillee & Jowell, 1977; Schumann & Presser, 1977; Smith, 1995).

In addition to clinical interviews, semi-structured interview formats frequently form the first stages of a functional assessment. Thus, the collection of accurate and detailed information, as well as being a central aim of a clinical interview, is also an essential part of functional assessment (Sturmey, 1996). Indeed Sturmey notes that while it may be possible to conduct a functional analysis without conducting an interview, it would be most unusual to do so. For this reason we will now turn to the ways in which information is elicited from third parties as part of a functional analysis of challenging behaviour.

3 Challenging Behaviour and Functional Analysis

Challenging behaviour covers a wide spectrum of behaviours which impact on the health or quality of life of an individual or those around them (Emerson, 1998b; 2001). One influential approach to treating challenging behaviour is through a functional approach (e.g., Carr, 1977) whereby a number of individuals who have contact with the individual exhibiting challenging behaviour are interviewed. The key to the functional approach is the implementation of interventions built upon a knowledge of the factors that cause and maintain behaviour, and the function it serves, so that alternative but similarly functioning behaviours can be established (Repp, Felce, & Barton, 1988). Demchak and Bossert (1996) emphasise four key assumptions as necessary for such interventions to succeed: that behaviour has a purpose; a communicative intent; does not occur randomly; and can have different functions in different contexts.

What makes functional analysis challenging for practitioners however, is that the topography, triggers and maintainers of behaviour are variable and complex. Indeed it has been observed that the cause and maintenance of challenging behaviour, as well as varying across and within individuals and different types of behaviour, may even vary within individuals across situations and topographies (Demchak and Bossert, 1996; Emerson, 1998a; 2001; Mace, 1994; O'Neill et al., 1990; Romanczyk, Lockshin, & O'Connor, 1992).

Additionally, as the triggers of behaviour may be internal, or temporally distant from the consequence, associations can be hard to establish and may not be directly observable. Further, the creation of effective functional equivalents, is typically dependent upon information elicited about the interviewee's reaction to the behaviour in question. Therefore successful functional analysis requires detailed, rigorous assessment, observation and manipulation of a variety of factors, with simple explanations and interpretations based upon inaccurate or incomplete data being unlikely to be successful. Thus the need and advantage of improving the quality of information elicited at this early stage of the process is clear. The following section discusses how this can be achieved.

3.1 Informant Assessment Within Functional Analysis

Within the process of functional analysis, three separate but interlinked steps of; informant assessment; direct observation and analog assessment have been identified (Martin, Gaffan, & Williams, 1999). The first step concerns the initial stages of assessment and data collection. This involves consulting with third parties who are able to provide details about the behaviour in question. This includes information concerning the factors which evoke and maintain the behaviour and the identification of variables for further exploration (O'Neill et al., 1990). However, as the data obtained through such indirect assessments may be incomplete or inaccurate, it is frequently only the first step of a detailed process and

should be followed by more rigorous approaches, such as direct observation or environmental manipulation (Demchak and Bossert, 1996; O'Neill et al., 1990; Sturmey, 1996).

The next step, for example, draws on the information gained from the initial interview, and involves the direct observation of behaviour in the individual's natural setting. This information is then used to provide a descriptive analysis and, together with the interview based information, is used to formulate hypotheses concerning the function of the behaviour. However, as this information is correlational and descriptive, it may still require further exploration (Demchak & Bossert, 1996; O'Neill et al., 1990; Yarbrough & Carr, 2000).

The final and most rigorous method of functional analysis builds upon the previous two steps and involves the experimental manipulation of the hypothesized environmental variables, and observation of this upon the target behaviour. Thus, due to the experimental control exerted in this final step, causal conclusions can be made. This final stage is the most powerful and rigorous stage of a functional assessment (Yarbrough & Carr, 2000).

However, while the ability to provide causal inferences about behaviour and environmental influences is a strength of this final step, it is not without its difficulties. For example, Lennox and Miltenberger (1989) and Sturmey (1996) note that the short analog durations used may prove

insufficient to assess low frequency problem behaviours. Additionally, experimental control over an individual's environment, as well as being costly and time consuming, may not always be possible or be ecologically valid (Yarbrough & Carr, 2000). Further, in order to achieve this, the complicated and time consuming process of direct observation has to be endured (Crawford, Brockel, Schauss & Miltenberger, 1992). The difficulties associated with these two stages, make the implementation of functional interventions, without the need for systematic environmental manipulations or observation compelling. However it should be remembered that these additional steps may be necessary to untangle the veracity of the conflicting hypotheses which may be generated from the previous stages (O'Neill et al., 1990). We will now turn to ways in which information elicited from functional assessments/interviews can be improved.

4 Improving the Quality of Information Elicited Through Third-party Assessment

Due to the importance that the initial interviews have upon the subsequent steps of a functional assessment, we can see that the collection of good quality information at the initial stage of an assessment is essential for effective clinical work (Demchak and Bossert, 1996; O'Neill et al., 1990). This assertion is enhanced by Desrochers, Hile and Williams-Moseley's (1997) finding that over 95% of practitioners frequently use interview methods of assessment with this, along with

observational approaches, being considered one of the most useful methods of data collection regarding the function of behaviour.

Further, Noone, Jones, and Hastings (2006) suggest that if assessments can effectively tap into staff knowledge of the causes of challenging behaviour and lead to the creation of functional hypotheses, the more costly subsequent phases could be avoided. Similarly, drawing upon Desrochers, et al. (1997), Yarbrough and Carr (2000) suggest that the ability to identify the function of an individual's behaviour through initial informant assessment, or to be able to identify the conditions under which informant based assessments are sufficient, may prove advantageous to clinical practice. Indeed it is possible that sufficient information to define the behaviour, its function and antecedents may be achieved solely through third-party assessment data. However, the subsequent stages of assessment remain valuable as they may validate the information and combine with the information gathered from the interviews to create a more comprehensive understanding of the behaviour and its function from which to base interventions (Nicholson, Konstantinidi, & Furniss, 2006; O'Neill et al., 1990).

Thus, accurately elicited information is likely to prove beneficial for practitioners for two reasons. Firstly, it reduces the dependency upon more time consuming steps, if the information elicited is sufficient for a functional assessment to be advanced (Durand & Crimmins, 1988; Paclawskyj, Matson, Rush, Smalls & Vollmer, 2000; Yarbrough & Carr,

2000). Secondly, should these subsequent steps be necessary, the time spent pursuing inaccurate hypotheses is likely to be reduced if the initial information gained is accurate and detailed.

Interestingly, Yarbrough and Carr's (2000) findings did indeed indicate that under certain situations the information elicited through third-party informant based assessments were validated by subsequent functional analysis. However, in other situations (e.g., more complex behaviours with internal or temporally distant antecedent factors) more detailed functional assessments were required to uncover the function of a behaviour. This important and interesting finding probably reflects the complex nature of challenging behaviour.

A further advantage of gaining more detailed and comprehensive information at this stage may be the impact that such increased understanding has upon respondent stress and anxiety. For example Bromley and Emerson (1995) note that staff members find unpredictable and difficult to understand behaviour stressful and anxiety provoking. Thus, during initial assessment interviews, if good quality and detailed information can be elicited, and if this leads to the creation of a shared hypothesis concerning the function of the behaviour, staff stress and anxiety is likely to reduce as the behaviour becomes more predictable and understandable. As we suggested previously, accurate exploration of such staff issues is likely to be influenced by the quality of rapport that is established.

We shall now turn our focus to some of the ways in which third-party information is elicited from informant based assessments as part of a functional assessment. However it is important to reiterate that the aim here is not to critically evaluate one method over and above any other method. Rather the aim is to give the reader a 'generic' flavour of the techniques available and to illustrate the ways in which information can be elicited from third parties.

4.1 Informant Based Assessment within Functional Analysis

Several different approaches to third-party informant based functional assessment are currently available for specific problems such as self harm (Durand & Crimmins, 1988; Weiseler, Janson, Chamberlain & Thompson, 1995), school refusal (Kearney and Silverman, 1991), motor-tics (Watson, Dufrene, Weaver, Butler, & Meeks, 2005) as well as approaches that can be applied to a range of behaviours (Demchak & Bossert, 1996; O'Neill et al., 1990; Iwata, 1995; Willis and LaVigna, 2003 and Zarkowska & Clemments, 1994) or used for the functional assessment of multiple causality (Matson et al., 2003).

Within these approaches, questions focus on a description of the topography of the behaviour, its frequency, intensity, impact, duration and consequence. Biological and environmental factors such as medication, physical health, level of ability, sleep and dietary patterns may also be explored. Additionally, the consequence and efficacy of behaviour, along

with situational factors such as time of day, the influence of different staff members and the efficacy of previously attempted interventions are also considered (Demchak & Bossert, 1996; O'Neill et al., 1990 and Willis and LaVigna, 2003).

For maximum effectiveness, Emerson (2001) notes that the functional assessment formats should be seen as guides to interviewing, with additional questions, as indicated above, being used to facilitate a detailed understanding of the behaviour. Indeed, as Morganstern (1988) notes, an effective interview should cover "everything that is relevant to the development of effective, efficient, and durable treatment intervention" (p. 52). Thus regardless of format, functional assessment formats can be viewed as similar with regards to their objectives. However, as we shall see the way in which this is achieved may differ between the approaches. The review will now briefly outline a number of functional assessment tools currently available.

Functional assessment tools can be divided into two broad types. Firstly those that ask predominantly open-ended questions, and those that ask predominantly closed or forced-choice questions. As we shall see both approaches have a number of advantages and disadvantages. With regards the former, O'Neill, et al's. (1990) Functional Analysis Interview Form (FAIF) consists of a number of open-questions focusing on a variety of areas. Use of the FAIF keeps the interview focused and assists in the creation of a comprehensive description of the behaviour and its potential

functions (O'Neill et al., 1990). In addition to the interview structure, O'Neill, et al. (1990) provide materials and guidance in how to summarise and organise the wealth of information generated from the interview. Completion of the interview phase leaves the clinician to draw upon clinical experience and to decide upon the next phase of the assessment (O'Neill et al., 1990).

Completion of the FAIF produces a comprehensive volume of data capable of generating hypotheses about the behaviour in question. In this respect the FAIF can be seen as similar to the guides produced by Demchak and Bossert (1996) and Zarkowska and Clemments (1994). These procedures are possibly the most similar to the semi-structured interview formats discussed previously, in that structure and format is provided (Morganstern, 1988).

While the predominantly open-ended approaches of Demchak and Bossert (1996), O'Neill, et al. (1990) and Zarkowska and Clemments (1994) are commendable for the depth and quality of information they produce, skilled interpretation and analysis is required to make meaningful use of the data (Sturmey, 1996). Additionally the production of such a wealth of information may result in something akin to "data overload" (Miles and Huberman, 1984) where the quantity of elicited information impacts upon clinical resources. In attempting to reduce this possibility, shorter and simpler methods of assessment, which rely more

on closed or forced choice question formats, may be beneficial. Some of these shorter methods will be outlined below.

These shorter methods typically provide a number closed or forced-choice questions that respondents rate regarding the frequency and perceived function of the behaviour across a variety of situations. In contrast to providing a structure to the clinical interview, the use of checklists such as the Questions About Behavioral Function (QABF) (Matson & Vollmer, 1995; Vollmer & Matson, 1996) or use of the Functional Analysis Checklist (FAC) (Van Houten, Rolider & Ikowitz, 1991) cover a range of salient topics concerning the cause of challenging behavior. However Van Houten and Rolider (1989) suggest that an additional strength of the FAC lies in its ability to serve as a hypotheses generation tool, or guide for additional clinical assessments. Thus the use of the FAC could result in a more unstructured, hypothesis driven interview format (e.g., Turkat, 1988) being adopted, based upon information elicited through use of the tool.

In addition to these checklist approaches, two questionnaire based methods of data collection are available (the Functional Analysis Screening Tool [FAST] (Iwata, 1995) and the Motivational Assessment Scale [MAS] (Durrand & Crimmins, 1992)).

Iwata's (1995) questionnaire (FAST) requires respondents to answer "yes/no" to questions concerning factors associated with the occurrence

of challenging behaviour. Durand and Crimmins's (1992) questionnaire (MAS) provides descriptions of situations where the behaviour is likely to occur, with respondents being required to estimate on a Likert scale the likely occurrence of the behaviour in each situation. In both the FAST and MAS, responses are scored with regards to the categories of behaviour (e.g., attention, escape), with the highest score indicating the possible function of the behaviour. Thus these methods are quick to use and, through provision of a simple score, avoid the need for detailed analysis and interpretation.

However, while producing quantifiable and comparable responses (Hewstone, 1989), the format and application of the MAS, QABF and FAST as structured interviews or self-completed questionnaires (Robson, 1993), does not allow wider exploration of the function of behaviour to be made (as may be achieved through use of a broader open questioning style within a semi or unstructured interview format). So it is possible that their strength may also contribute to their weakness. Additionally these methods provide limited room for rapport to be established which, as outlined previously, may serve several beneficial purposes. Further, the value of any measure depends heavily upon its reliability and validity. The next section aims to consider these important areas.

5 The Reliability and Validity of Third-party Clinical Assessments

Issues pertaining to reliability and validly are known and are standard within observational methods (Kazdin, 1977; Suen and Ary, 1989). Such rigor would be relatively simple to achieve for informant based assessments through collating information across respondents, through triangulation of a variety of approaches (Cohen-Mansfield & Libin, 2004; Kay, de Zapien, Wilson & Yoder, 1993) or by conducting further functional assessments (Durand & Crimmins, 1992; Noone, et al 2006; Hall, 2005; Yarbrough & Carr, 2000). However this does not occur as standard for informant based assessments (Emerson, 1998a).

Indeed, Sturmey (1996) notes that while the MAS has received extensive evaluation, less independent evaluation has been conducted on the QABF, FAIF or FAC. In one exploration of the FAC, Sturmey (2001) found that inter-rater and test-retest reliability was poor and varied greatly between individuals. However in contrast to the FAC, research has indicated that the QABF is an effective tool in identifying the function of behaviour (Matson, Bamburg, Cherry, & Paclawskj, 1999) and that interventions based upon information elicited from the QABF are more effective than interventions which are not (Paclawskyj, et. al., 2000). However, Shogren and Rojahn (2003) found lower levels of test-retest and inter-rater reliability than had been previously reported, as did Nicholson, et al (2006). Nevertheless, observed levels of reliability were

higher than those obtained for other measures such as the MAS (Paclawskyj, Matson, Rush, Smalls, & Vollmer, 2001).

Indeed, while Durand and Crimmins (1992) reported good levels of test–retest and inter-informant agreement for the MAS, and a high concordance with subsequent functional analytic procedures (also found by Noone, et al 2006), the reliability and validity of the MAS has not been replicated by others (Emerson, Thompson, Reeves, Henderson & Robertson, 1995; Thompson & Emerson, 1995).

Thus, while the reliability of informant based assessments, both as a standalone assessment and as part of a subsequent functional assessment has, to some extent, been established, Emerson (1998a; 2001) notes that the conflicting findings suggest that levels of reliability and validity remain questionable with a number of factors (e.g., experience of informants, variable rates of behaviour, the methodology employed, the socially constructed nature of challenging behaviour) contributing to this variability (see Emerson, 1998b; Nicholson, et al 2006; Paclawskyj, et, al., 2000). While these suggestions are plausible, there are a number of other possible explorations for the observed variations in reliability and these are documented below.

First, it is possible that these inconsistencies in findings may stem from the assessment tool's structure (i.e., a series of closed questions), which combines with the complex nature of challenging behaviour and the

difficulty respondents have in identifying the function of certain types of behaviour. Thus, the strength (speed of use and ease of interpretation) of these measures, may also be responsible for their downfall. That is, the use of a limited range of questions, with limited room for respondent elaborations, may not be suitable for exploring the complexities of some types of challenging behaviour. Therefore, in some situations (e.g., the more straight-forward cases of challenging behaviour) the functions identified through the use of these approaches are sufficient, as confirmed through ABC chart information (Durand & Crimmins, 1992; Noone, et. al., 2006), while in other situations (e.g., the more complex cases of challenging behaviour) their validity may be more questionable (Emerson, et al., 1995; Thompson & Emerson, 1995).

Such a speculation should be considered in relation to Yarbrough and Carr's (2000) finding that under certain situations (e.g., avoidance of external stimulation), information elicited through third-party informant based assessments was sufficient, while in other situations (e.g., gaining internal stimulation), more detailed functional assessments are required due to the complex and varied nature of challenging behaviour (e.g., Emerson, 1998a; 2001; Romanczyk et al., 1992). It would seem possible then, that the range of these situations can be influenced through assessment format. That is, open and in-depth questioning formats/styles are likely to allow a wider range of situations to be effectively assessed, compared to use of closed and narrow questioning formats/styles from questionnaires or checklists, which are likely to reduce the number of

situations where sufficient information is collected to produce a valid functional assessment.

Secondly, an additional reason for the observed variation in reliability might centre around the nature of the task required within these assessments. For example, the MAS requires respondents to identify a specific target behaviour, specify the situation where the behaviour is likely to occur, and then estimate the likelihood of that behaviour occurring. As with other methods (i.e., FAC, FAST, QABF) respondents may find it difficult to abstract from several occurrences of behaviour to produce one generic answer. Additionally, such a task may focus more upon an informant's beliefs or assumptions about behaviour, rather than accessing actual recollections of the behaviour.

Thus, while Durand (1990) suggests that consistency between informants indicates validity, it is possible that this validity might reflect the consistency of an informant's beliefs, rather than the validity of the veracity of the data collected. Indeed, the complex nature of challenging behaviour and the difficulty respondents have identifying the function of certain types of behaviour (Morgan & Hastings, 1998) may encourage respondents to draw more upon beliefs than recollections, when answering these questions.

What is clear from the inconsistency of findings across these measures, is that quick and easy methods may be of value in some instances but

not in others. Given the complex and varied nature of challenging behaviour, good quality information concerning the topography of behaviour, (which can guide subsequent assessments or interventions) is essential, but this may not always be achieved through questionnaire or checklist approaches. This is indeed the stance taken by O'Neill, et al. (1990) and Van Houten and Rolider (1989). As a result, several authors have provided step-by-step guides on how to conduct more detailed and comprehensive assessments (Demchak & Bossert, 1996; O'Neill et al., 1990 and Willis & LaVigna, 2003). However, as we shall see, even these more comprehensive interview methods may experience shortfalls due to their lack of attention to factors (e.g., questioning style, rapport building) which we shall term herein "good interviewer behaviour" (GIB), which may influence the quality of information elicited.

5.1 The Importance of "Good Interviewer Behaviour"

While several authors (Demchak & Bossert, 1996; O'Neill et al., 1990), provide detailed manuals concerning the conducting of interviews as part of a functional assessment, there are several concerns relating to GIB inherent in these manuals. For example, a common theme of the manuals is their use of questions which require abstraction from repeated observations across various settings to a single answer. Such a questioning style seems in conflict with our knowledge that challenging behaviour is complex, variable over time and that topographically similar behaviours can serve different functions (Demchak & Bossert, 1996;

Romanczyk et al., 1992). Further, such an approach is also incongruous with the recommendation that assessments should identify the function of each topographically distinct behaviour separately (Emerson, 2001). O'Neill, et al. (1990) do however encourage the interviewer to look for classes of behaviours not by topography but by function, thus allowing different behaviours with a common function to be identified.

It is possible that a better approach might be to focus on specific and separate incidents of behaviour and recall those independently as opposed to combining similar occurrences into one type of problem behaviour either by topography or function. This point may be particularly salient to the predominantly short response formats where the limited scope and style of questioning does not so easily allow more detailed and comprehensive respondent comment.

Additionally, while care is taken in clinical interviews to avoid certain types of questions because of their impact upon respondents (Hoinvillee & Jowell, 1977; Schumann & Presser, 1977), within these assessment manuals, long, quite technical and multiple questions appear common. Similarly, despite the importance of rapport between the interviewer and respondent in eliciting information being emphasised (Morganstern, 1988; Sturmey; 1996; Kirk,1989), these manuals give very little detail as to how this may be achieved.

Thus, in light of what we know about GIB and its impact upon interviewees, it is possible that the efficacy of these manuals could be improved if more detail were provided concerning the importance of question wording, rapport building and other interview skills. Indeed Maguire, Booth, Elliott and Jones (1996) found that in the field of oncology training health care professionals in interviewing skills, increased behaviours associated with an enhancement of the disclosure of information (e.g., open directive questioning, questioning of a psychological focus and clarification of psychological aspects). It is likely that similar attention within clinical assessments would also yield an increase in salient information. Miltenberger and Fuqua's (1985) finding that self-completion training manuals are an effective method of interview skills training, suggests that these aspects of GIB could be effectively included in current functional assessment manuals.

In summary then, each method has advantages and disadvantages which a clinician will need to consider in light of the resources they have available and their current need. For example the FAC, FAST, MAS, and QABF are quick and simple to use, while the FAIF produces a wealth of information. However the MAS's, FAC's and QABF's reliability across situations appears varied, while the FAIF's wealth of information requires time consuming further exploration and could be responsible for data overload.

Before exploring the possibility that the quality of information elicited from third-party assessments can be enhanced through "modifications" that have been useful in the psycho-legal domain, we will firstly consider how respondents' belief about challenging behaviour may influence the quality of information elicited. We will now move onto the second aim of this review and consider the importance of interviewee beliefs about challenging behaviour and how these may influence recollections of incidents of challenging behaviour.

6 Interviewing Others: The Importance of Respondents' Beliefs

A number of authors have emphasised the importance of interviewing a number of individuals to fully explore the behaviour in question (O'Neill et al., 1990; Sturmey, 1996). However, a good deal of research has indicated that individuals have different attributions about behaviours (Noone et al., in press), have a variety of beliefs and understandings about behaviour (Bromley & Emerson, 1995; Hastings, 1995; 1997; Hastings, Remington & Hopper, 1995, Stanley & Standen, 2000; Whittington & Burns, 2005), and that these understandings can influence their response to any given behaviour (Brewin, 1984; Dagnan, et al, 1998; Hastings & Remington, 1995; Leggett & Silvester, 2003; Mackay, & Barrowclough, 2005). In addition to influencing their interactions with the individuals in their care, staff beliefs about challenging behaviour are also important determinants of when to seek external support, and the degree to which an intervention is maintained (Bromley and Emerson; 1995;

Hastings and Remington, 1994a; Watts, Reed, & Hastings, 1997; Woods & Cullen, 1983). Additionally it has been suggested that inappropriate beliefs about how to respond to behaviour may lead to inappropriate and ineffective interventions being used by staff (Hastings and Remington, 1994b).

Thus, we can see that carer beliefs are important antecedents to the type of interaction and care an individual may receive. However, at present little evidence exists concerning the influence of these beliefs upon carers' recollections of incidents of challenging behaviour. Given the importance of respondent based information in devising interventions, this may be an important oversight in the literature. We will now present evidence as to why we believe that recollections concerning the topography of an incident of challenging behaviour may be influenced by carers' beliefs about the behaviour.

6.1 The Influence of Scripts and Schema upon Recollection

The classic work of Bartlett (1932) illustrated that individuals' recollection of events are greatly influenced by their expectations of the event (i.e., their schema). Indeed, a substantial body of evidence has indicated that people interpret, understand and recall events in terms of their scripts and schemas (Anderson & Pichert 1978; Alba and Hasher, 1983; Bartlett, 1932; Brewer & Treyens, 1981; Rumelhart & Norman, 1983).

Schemas are defined as structures of clustered concepts, typically consisting of knowledge representing events. The term schema describes a broad concept, which can take different forms depending on the type of information that it is representing (Cohen, 1989). For example, a "script" represents generic knowledge concerning a sequence of events, whilst a "frame" represents knowledge concerning the properties of objects. For our purpose, we use the terms script/schema to refer to the generic knowledge, beliefs and assumptions that a carer may have concerning the occurrence of challenging behaviour in another individual (i.e., person scripts).

Fiske and Taylor (1984) note that person scripts contain information and beliefs consistent with characteristics and traits of other people, with this information being used to understand, interpret and remember a person's behaviour in a consistent manner. Additionally, Anderson and Cole (1990) found that when person scripts are activated, recollection of others is influenced by the activated script, and characteristics congruous with the script are "remembered" (even when they do not exist), while information which is present, but incongruous with the script, is "forgotten". Several studies have demonstrated the importance of schema / scripts in memory (Bower, Black & Turner, 1979; Brewer & Treyens, 1981).

In summary, schema-based memory theory would suggest that an individual's pre-existing script about the cause and function of challenging

behaviour will operate in a conceptually-driven way and exert an influence upon how information is encoded, stored, made sense of, and retrieved (Alba & Hasher, 1983). Additionally unpredictable and difficult to understand behaviour, which staff members find stressful and anxiety provoking (Bromley and Emerson, 1995), may undergo larger schematic based alterations in order to be normalised and rationalised (i.e., to be understood and made sense of) in light of the carers beliefs about such behaviour. Thus, information consistent with beliefs about challenging behaviour, is more likely to be remembered than information that is not consistent with beliefs about the behaviour. It is, however, worth noting that contrary to this prediction, that a superiority of schema-inconsistent recall has also been found (Brewer and Treyens, 1981).

Haber and Haber (2000) note that memory is not an accurate recording of what occurred, but rather a psychological construction that assists individuals to make sense of their world. From what we have seen above then, an individual's belief about challenging behaviour (i.e., their scripts) is likely to play a substantial role in this process. Further, because recollection of an event involves reconstructive processes utilizing information from many different sources (Anderson, 1990; Schwartz, & Reisberg, 1991) and because individuals tend to have poor knowledge concerning the source of their memories (Johnson, Hastroudi, & Lindsay, 1993), we can see how scripts (beliefs) may combine with event recollections to create a composite memory of an incident of challenging behaviour. Further, the automatic nature of these reconstructional

processes, leave the individual unaware that a composite memory has been created and so the recollection is believed to be truthful and accurate regardless of actual veracity (Leippe, 1980).

We have already outlined that care staff have a variety of beliefs and understandings about challenging behaviour (Bromley & Emerson, 1995; Hastings, 1995; Hastings, 1997; Hastings, Remington & Hopper, 1995, Stanley & Standen, 2000). In light of the speculated influence of these beliefs on memory, we can see how recollection of incidents of challenging behaviour may be influenced in two ways. Firstly, scripts may combine with the memory of the incident, with the resulting recollection being based not only upon what actually happened, but also upon what the individual believes about challenging behaviour. Such a point may be increasingly salient in instances where the respondent is required to think of occurrences of behaviour and give a rating concerning the likelihood of that behaviour occurring (e.g., the FAC, FAST, MAS, QABF), in that a generic belief / assumption (script) about the behaviour, rather than specific incidents may be accessed in order to answer the question posed. Secondly, scripts may be used to self-edit information in an attempt by a respondent to recall what is perceived as relevant.

We can see then that staff beliefs may be an important factor that influences the quality of information a carer gives concerning an observed incident of challenging behaviour. We now turn our attention to how the methods utilised at retrieval may facilitate accurate recollection of an

incident of challenging behaviour. Importantly Morris, Bransford and Franks (1977) have indicated that the quality of information elicited from memory is dependent upon two factors: the amount of information encoded and the type of retrieval method used. Whilst nothing can be done about the amount of information a carer encodes, clinicians are able to influence the methods by which they facilitate recollection of an event. We will now move on to the third part of this review and consider the ways in which the quality of information obtained during clinical assessments/interviews may be enhanced.

7 Enhancing the Quality of the Information Obtained at Interview

Drawing upon other areas of Psychology, we, as clinicians, may find ways in which the information gleaned from a clinical interview could be enhanced. One fruitful avenue worthy of exploration may be the psycho-legal arena, where the interviewing of witnesses and victims of crime has received a lot of attention (Milne & Bull, 1999). Of particular interest to us in this instance, is the literature concerning the use and effectiveness of Fisher and Geiselman's (1992) Cognitive Interview (CI) which is typically used to elicit information from individuals who have been involved in, or who have observed a criminal event.

Across a number of settings (experimental and applied), the CI has been typically shown to cause a significant increase in correct recall without a significant increase in errors compared to "typical police" and "structured

interviews" (i.e., artificially created experimental control interview conditions) (Fisher, McCauley, & Geiselman, 1994; Milne, 1997, 1999). This evidence suggests that if clinical psychologists want good quality information about the topography of an individual's behaviour, it would be worth investigating an integration of the effective components of the CI into existing clinical methods. Indeed, Fisher, McCauley, Falkner, and Trevisan (2000) encourage exploration of how the advantages of the CI as an interview tool can be extrapolated to other areas of importance.

The original CI consisted of four cognitive mnemonics derived from two major theoretical principles of memory, (i) encoding-specificity / feature-overlap (Flexser & Tulving, 1978; Tulving & Thomson, 1973), and (ii) the multi-component / multi-trace theory of memory, (Bower, 1967; Tulving, 1974).

The four cognitive mnemonics of the CI are:-

- Context Reinstatement; where an individual is required to mentally put him/herself back into the context they observed the event in.

- Report All; where the individual is required to recall everything they can remember even the seemingly insignificant or partial.

- Change Perspective; where the individual is required to remember the event from a different orientation or perspective.

- Change Order, where the individual is required to recall the event in a backwards chronological order.

Drawing upon the work of Flexser and Tulving (1978), the Context Reinstatement mnemonic assumes that a memory consists of several features and that a retrieval method with the most feature overlap with the memory will be the most effective. Therefore by requiring interviewees to mentally reinstate the context, the use of context reinstatement increases the amount of feature overlap provided at retrieval in order to facilitate recollection. George and Clifford (1991) state this to be one of the most effective and durable aspects of the CI.

The Change Order and Change Perspective mnemonics of the CI are based on the assumption that there are several ways to access the memory of an event (Bower, 1967). Thus it is argued that information not accessible via one technique (i.e., one pathway) may be accessible by another (Tulving, 1974) and so these mnemonics aim to encourage the use of many retrieval pathways in an attempt to facilitate recall (Gwyer, 1997). This could be seen as analogous to searching for a set of car keys. The more searches you make for them, the more likely that you will find them, and just because you were unsuccessful the first time, doesn't mean you won't find them if you keep looking. This is not to say that all information is always retrievable if you keep searching, sometimes car keys will remain lost despite frantic searching. The Change Order mnemonic (Geiselman & Callot, 1990; Whitten & Leonard, 1981) and the

Change Perspective mnemonic (Anderson & Pichert, 1978) have been shown to aid retrieval in a number of instances.

In addition to increasing the number of retrieval searches undertaken, these two mnemonics may also facilitate recall by reducing the detrimental effect that interviewee beliefs may have upon recall (Fisher & Geiselman, 1992). That is, these two mnemonics may facilitate recall by (i) requiring respondents to base their recollection on a different script (i.e., Change Perspective) and (ii) by making script based recall harder as script based recall is likely to be temporally ordered and thus incongruous with a request to recall from a Changed Order.

The final CI mnemonic is to "Report Everything / Report All". This mnemonic, is considered to be effective due to the increase in the amount of feature overlap it provides (Clifford & George, 1996; Fisher, McCauley & Geiselman, 1994; Geiselman, Fisher, Firstenberg, MacKinnon & Holland, 1986) and because it is responsible for an increase in the number of memory searches undertaken, which may cue more useful information (Geiselman et al., 1984). It may also prove beneficial at reducing script based self-editing in response to erroneous beliefs about what is relevant, (Hastings & Remington, 1994b). This mnemonic is frequently used as an adjunct and in conjunction with the other mnemonics or memory searching instructions of the CI (Geiselman et. al., 1984; Memon, Cronin, Eaves, & Bull, 1992).

7.1 The Enhancement of the Cognitive Interview

To further facilitate recall, the CI has also been enhanced to take into account the social dynamic aspects of interpersonal communication (Fisher, Geiselman, Raymond, Jurkevich, Warhaftig, 1987; Fisher & Geiselman, 1992). Thus, in addition to the four mnemonics, an important component of the CI (or Enhanced CI) is "good interview behaviour", which is similar to that found in many Clinical Psychology interview formats outlined previously.

The enhanced CI incorporates important aspects of interpersonal communication which aim to further improve the quality of information that an interviewee recalls. For example, rapport is used to personalise the interview with the interviewee being made to feel comfortable and learning that they will not be interrupted. The control of the interview is transferred to the interviewee and based around their own mental representations of the event (Fisher & Geiselman, 1992).

Interviews do not follow a rigid checklist approach of closed questions led by the information that the interviewer requires. Instead, information is elicited in a way compatible with the respondents unique representations of the event. Indeed, the findings of Fisher, et al. (1987) that inappropriate sequencing of questions is likely to attenuate memory retrieval, and Lipton's (1977) finding that closed questioning styles are likely to elicit more erroneous recall than open questioning styles, are serious considerations that may have been overlooked by some functional

assessment procedures. We can see from this therefore that the structure of some assessment procedures (e.g., the FAC, FAST, MAS, QABF) may not best suit the facilitation of accurate recall. Thus unlike within some clinical procedures, within the CI, uniform and rigid, questions are avoided and questions are withheld until they are convenient for the interviewee to answer, not the interviewer to ask. This careful timing and use of questions is beneficial as it facilitates not only the use of the mnemonics of the CI, but also allows the use of associated strategies (e.g., imagery) to facilitate recollection (George & Clifford, 1992).

Fisher & Geiselman (1992) also suggest that as only one mental representation of the event can be active at a time, only questions and probing concerning that representation should be asked. This aims to minimise the mental workload of the interviewee and makes retrieval more efficient by preventing the interviewee from activating and reactivating different mental representations (memories) of the event so as to answer the interviewer's questions (Fisher & Geiselman, 1992).

The mnemonics and components of the CI should not be seen as a strict set of procedures and techniques that must be rigidly followed by the interviewer for all interviewees. Instead the effective interviewer is encouraged to use the components of the CI as tools, which can be used depending upon the individual interviewees strengths and weaknesses (Fisher and Geiselman, 1992). Such an approach is extremely demanding for the interviewer and requires a good deal of skill and ability,

but is deemed worthwhile in light of the enhanced quality of information that is elicited as a result (Fisher and Geiselman, 1992). Such interviewer behaviour can be seen as compatible (e.g., using appropriate questions, building a good rapport, and not interrupting) and an enhancement (e.g., basing the interview around the interviewee's unique mental representation, and asking interviewee compatible questions) to the "good interview behaviour" found within clinical interviews outlined previously.

Finally, it was speculated previously if rapport could be extended to include exploration of staff feelings and concerns regarding the incident in question, in order to serve a supplementary function concerning staff welfare. Such an approach would be a novel adaptation of the CI, but one which might enhance its use within clinical settings, and something that could easily be incorporated into its structure.

7.2 The Effectiveness of the Cognitive Interview in the Forensic Setting

To date the majority of research, and all published studies concerning the CI's effectiveness, have occurred within the psycho-legal domain, and it is this research to which we will now turn as we consider the effectiveness of the CI. Many comparisons of the CI to what some have termed the "typical" police interview, or a specifically created "structured interview" have been conducted. Results typically indicate that the CI is responsible for a significant increase in correct recall, without a corresponding increase in errors (Aschermann, Mantwill & Koehnken,

1991; Gwyer & Clifford, 1997). These improvements in recall have been observed across a wide selection of experimental and applied events (for comprehensive reviews see Bekerian & Dennett, 1993; Fisher, et al., 1994; Koehnken, Milne, Memon, & Bull, 1999; Milne, 1999). There are however instances where this success has not been found. For example, Memon, Wark, Holley, Bull and Koehnken (1997) found no significant differences between the CI and other interview techniques in terms of the amount of correct information recalled. Additionally, and possibly more alarmingly, some studies have even found an increase in errors or confabulations reported as a function of the CI (Koehnken, et. al., 1999; Mantwill, Koehnken & Aschermann, 1995). One salient issue pertinent to this, concerns the comparison condition utilised.

7.3 The Comparison Condition Utilised

Mantwill et. al., (1995) suggest that the control interviews utilised in their study (i.e., structured interviews) could have been responsible for producing less incorrect recall than the "typical" police interviews used in previous research. Thus, observed increases in the number of errors reported are only significant because of improvements in the control conditions used. However Mantwill et. al. (1995) suggest this is an unconvincing argument as the error rates within their study are comparable to the rates found in previous studies.

Mantwill et. al. (1995) also state that as most increases in errors reported

have been found with the enhanced CI, this would suggest that aspects of the enhancement are responsible for the increase in errors reported. This is clearly of importance to us as clinicians as such enhancements (e.g., good interviewer behaviour) are substantial components of clinical interviewing. Fortunately, as Mantwill et. al. (1995) note, such an explanation seems unlikely as in several instances the control condition used (i.e., the structured interview) is an enhanced CI, minus the cognitive mnemonics. Therefore if elements of the enhanced CI were responsible for an increase in the number of errors reported, these increases would also be found within the control (structured interview) condition.

The choice of control (comparison) interviews has been hotly debated in the forensic literature (Davis, McMahon, & Greedwood, 2004; Koehnken, et al., 1999). As similar debates could follow exploration of the CI's efficacy within clinical situations, it is important at this early speculative stage of investigation to outline the key concerns in order to ensure the most appropriate methods are used. Gwyer (1997) notes that within the forensic domain, several researchers (Geiselman, 1996; Koehnken, et al., 1999; Mantwill et. al., 1995) have drawn attention to the use of a "structured interview" as a control interview by which the effectiveness of the CI is assessed. A structured interview is an interview format identical to the CI, but one which does not contain the cognitive mnemonics. In light of this Geiselman (1996) suggests that it is not surprising that no increases in correct recall are found when the CI is compared to a

"structured interview", which itself incorporates several aspects of the enhanced CI (Gwyer, 1997).

Additionally in a series of personal communications (cited in Gwyer, 1997) Fisher states that as the "structured interview" is simply the deconstruction of a CI, its use as a control condition is simply the comparison of two differing types of CI (i.e., one with the cognitive mnemonics and one without). Fisher goes on to suggest that as the structured interview only exists as an experimental control condition, such comparisons between the CI and "structured interviews" are meaningless. This line of argument could follow when attempts are made to investigate the possible efficacy of the CI in clinical settings when what should be used as an appropriate control / comparison condition is considered.

One method of comparison would be to compare a "typical" clinical interview with a "typical" but modified clinical interview (i.e., one which contains the cognitive mnemonics and good interviewer behaviour of the CI). However what is a "typical" clinical interview? Is it, as outlined previously, one which is structured or unstructured? Or is it an interview format based around information elicited from other sources (e.g., the FAC, FAST, MAS, or QABF), or is it the procedures outlined by Demchak and Bossert (1996) or O'Neill, et al. (1990) for functional assessments? Or is something based upon the general principles of clinical interviewing? (e.g., Kirk, 1989; Sturmey, 1996; Prosser & Bromley, 1998; Emerson, 1998a).

The answer to any question concerning what the appropriate comparison control interview is, will be dependent upon the aims of the research. For example, if we wish to explore the use of the CI as an aid to functional assessment, one of the known functional assessment tools (e.g., FAC, FAST, MAS, or QABF) would intuitively seem a plausible comparison. However as outlined previously, an interview format based upon a series of specific closed questions which limit the scope of responses, would not be a suitable control condition for an open, dynamic and free flowing interview. In such a case the procedures outlined by Demchak and Bossert (1996) or O'Neill, et al. (1990) would arguably be more suitable. Or if the aim was more general (i.e., not to produce a functional assessment) then a generic interview based upon the suggestions of several authors (Emerson, 1998a; Kirk, 1989; Prosser & Bromley, 1998; Sturmey, 1996) may be appropriate.

However the picture is not so clear cut and straight forward. Within the CI the use of the Change Perspective and Change Order mnemonics allow two additional recall attempts to be made after an initial free recall is made following the instruction to reinstate context. Such multiple attempts are not common within the clinical interviewing literature. Thus, unless an artificial clinical interview is devised we could be comparing the efficacy of two interviews which utilise a different number of retrievals attempts. This would clearly confound any findings that are observed.

A solution to this would be to create a functionally equivalent, but Non

Specific Clinical Interview (NSCI) format that could serve as a comparison condition for research purposes. However, this leads us back to the point made by Fisher but within a clinical context. That is, as there is no such thing as a NSCI in the clinical setting, would comparisons between a CI and a specifically created (but artificial) interview be meaningless? The answer to this question is no.

That is, as Mantwill et. al. (1995) and Koehnken, et. al. (1999) note, there are several advantages to using a structured interview condition (e.g., NSCI) despite its artificial nature. For example it allows the effectiveness of the CI (or in this case a MNSCI) to be compared to an alternative retrieval (control) condition, where any possible improvements found are not confounded by issues such as a lack of interviewing skill, differing motivation, poor quality control, or unequal retrieval attempts. Therefore any research that wished to explore the efficacy of the mnemonics of the CI within the clinical setting should, for the purpose of experimental control and rigor, use a comparison condition where aspects of training and the use of techniques are comparable to the experimental condition. If this advice is followed, a functionally equivalent NSCI format, that can be compared to a Modified (i.e., including the effective components of the CI) Non Specific Clinical Interview (MNSCI) for use in experimental research, is worth pursuing. Use of such a control interview would also allow naïve interviewers to be used within research paradigms (i.e., those who have no clinical experience), and thus would be of value in eliminating unwanted demand characteristics or interviewer effects.

8 Conclusion

This review had three central purposes. Firstly, to explore current methods by which information is collected from third-parties concerning incidents of challenging behaviour, and to highlight some of the problems inherent within these approaches. Secondly, by making recourse to some theoretical principles of memory, the review suggested that failure to consider the possible impact of staff beliefs upon the quality of information elicited from third party interviews could be seen as an omission in the literature. Finally, the possibility that components of interview techniques currently used to great effect within the psycho-legal domain (i.e., the CI) could be effectively incorporated into current clinical interview methods was explored.

Indeed, from the outline of the efficacy of the CI provided, a clear rationale to assume that by taking the effective components of the CI and incorporating them into clinical interview methods, may result in an enhancement to the quality of information elicited, has been made. In addition a position concerning the most appropriate control condition by which these speculations could be empirically investigated was advanced.

From evidence provided in this review, it is clear that the scene is now set to explore two interesting possibilities. Firstly, that staff beliefs are an important factor to consider when assessing the quality of information

elicited from a third party interview. Secondly, that current clinical methods might be improved if the effective components of the CI were included in clinical interview methods. These speculations are clearly in need of empirical attention.

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Empirical Paper

The Effects of Modification and Observer Beliefs upon the Quality of Information Elicited through Clinical Interviews.

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The Effects of Modification and Observer Beliefs upon the Quality of Information Elicited through Clinical Interviews.

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Abstract

Working with individuals with learning disabilities who exhibit challenging behaviour is an area of clinical psychology which has received much attention. Of key importance to such work is the collection of accurate information concerning the topography of behaviour from which functional equivalent interventions can be created. However, individuals with disabilities may not be able to provide the required information themselves. In such cases third parties are typically used as sources of information. Due to the similarities between being interviewed about an incident of challenging behaviour and witnessing an event, by drawing upon established findings from the psycho-legal arena, there is a good possibility that the clinical process may be enhanced by incorporating aspects of the Cognitive Interview into any clinical methods currently used. Further, while the influence of staff beliefs upon staff interactions with individuals with challenging behaviour is well documented, no research exists concerning the effects of these beliefs upon recollection. In the light of the known influence of beliefs (scripts and schemas) upon memory this could be a serious omission from the literature. Thus this investigation aims to be a first step in exploring these possibilities. Three researchers interviewed participants about an observed incident of challenging behaviour, using either a "Non Specific Clinical Interview" (NSCI) or a "Modified Non Specific Clinical Interview" (MNSCI). Results indicated that the MNSCI was responsible for significantly more correct recall than the NSCI without a concomitant increase in errors. However, in contrast to predictions, interviewee beliefs about behaviour did not

influence recollections of the behaviour. Finally, interviewee confidence in ability to accurately remember the incident was not related to subsequent accuracy.

Introduction

Creating effective interventions for individuals with learning disabilities exhibiting challenging behaviour is of crucial importance to the work of clinical psychologists (Emerson, Hatton, Bromley, & Caine, 1998; Sturmey, 1996). Central to this process is the collection of information from which interventions can be formulated and implemented (Emerson, 2001; Emerson, et al., 1998; Hewett, 1998; Oliver, et al., 2003). However, as individuals with a disability may not be able to provide the required information themselves, clinical information is typically elicited via a number of third-party informant based assessments (Emerson, 2001; O'Neill, Horner, Albin, Storey, and Sprague, 1992; Sturmey, 1996).

In addition to the number of generic texts available to guide a clinician in the most effective ways to conduct a clinical interview (Emerson, 1998; Kirk, 1989; Prosser & Bromley, 1998; Sturmey, 1996; Sturmey, 1991), a number of empirically supported, manualised and theoretically driven clinical interview guidelines and functional assessment tools are available to assist clinicians in identifying the function of an individual's challenging behaviour (e.g., Demchak & Bossert, 1996; Durand & Crimmins, 1988; Iwata, 1995; Kearney and Silverman, 1991; O'Neill, et al., 1990; Weiseler, Janson, Chamberlain & Thompson, 1995; Willis and LaVigna, 2003; Zarkowska & Clemments, 1994).

A considerable amount of research has investigated the reliability of these tools (e.g., Durand & Crimmins, 1992; Emerson, Thompson, Reeves, Henderson, Robertson, 1995; Hall, 2005; Nicholson, Konstantinidi, & Furniss, 2006; Noone, Jones, and Hastings, 2006; Paclawskyj, Matson, Rush, Smalls, & Vollmer, 2000; Shogren, & Rojahn, 2003; Sturmey, 2001; Thompson & Emerson, 1995). However, it is not the aim of this research to evaluate the reliability of any one individual technique. Rather the research aims to investigate the possibility that the quality of information elicited from the use of any one of these tools may be improved by making recourse to the eyewitness interviewing literature (specifically that concerning use of the Cognitive Interview) which has proved beneficial in the forensic domain.

The parallels between witnessing an event and observing an incident of challenging behaviour, and the aims of an interviewer (i.e., to obtain accurate information concerning what occurred) are clear. Of particular interest here is the literature concerning the effectiveness of Fisher and Geiselman's (1992) Cognitive Interview (CI). The CI is an interview technique which is based upon two solid theoretical principles of memory: (i) encoding-specificity / feature-overlap (Flexser & Tulving, 1978; Tulving & Thomson, 1973), and (ii) the multi-component / multi-trace theory of memory (Bower, 1967; Tulving, 1974). These two principles are applied via the use of four cognitive mnemonics (Context Reinstatement, Reverse Order, Change Perspective and Report All). The CI has also been revised and utilises additional social components of behaviour (e.g., not

interrupting the interviewee) in order to facilitate retrieval (Fisher & Geiselman, 1992).

A wealth of literature has indicated the beneficial effects of using the CI as a method of gaining good quality information from individuals who have observed an event (Milne, 1999). Indeed, Fisher, McCauley, and Geiselman (1994) state that in 17 studies across a variety of events, in all but one instance, an enhancement in correct information was achieved through use of the CI, with no associated increase in errors. Thus, in light of the overwhelming positive findings associated with the CI's efficacy at enhancing event recall, it's solid empirical base and its use as an interview technique within police investigations the world over, it seems a promising method of data collection that clinical psychology should be aware of.

In addition to the CI's cognitive mnemonics increasing the amount of feature overlap and the spread of activation (e.g., Bower, 1967; Flexser & Tulving, 1978; Tulving, 1974; Tulving & Thomson, 1973), the use of the mnemonics may also facilitate recall by reducing the possible influence of staff beliefs upon recollection.

A substantial amount of research has indicated that individuals have different attributions and understandings (beliefs) about challenging behaviour (e.g., Bromley & Emerson, 1995; Hastings, 1995; 1997; Hastings, Remington & Hopper, 1995; Noone, et al., 2006; Whittington &

Burns, 2005) and that these understandings can influence how people respond to challenging behaviour (Dagnan, Trower, & Smith, 1998; Hastings & Remington, 1995; Leggett & Silvester, 2003; Mackay & Barrowclough, 2005). However, no research to date has investigated how an individual's beliefs may influence recollection of an incident of challenging behaviour. Why this is an area of interest to clinicians will be outlined below.

An individual's beliefs about another's behaviour are represented by a person script or schema (Fiske & Taylor, 1984). By drawing upon schema theory (e.g., Bartlett, 1932; Brewer & Treyens, 1981; Rumelhart & Norman, 1983) an argument can be advanced to suggest that observer beliefs, as well as influencing how behaviour is interpreted and responded to, may also influence what information is elicited during an interview. Indeed, Alba & Hasher's (1983) observations as to the effects of schema upon recollection suggested that it is likely that an individual's pre-existing script (and thus belief) about challenging behaviour will exert an influence upon how information is encoded, stored, made sense of and retrieved, and that these processes will influence what is remembered by an interviewee during a clinical assessment.

It is however possible that the mnemonics of the CI, as well as enhancing recall, may also prove valuable in allaying any concerns surrounding the possible influence of beliefs upon the quality of information elicited during clinical assessments. For example, within psycho-legal contexts Fisher

and Geiselman (1992) note that scripts and schemas may influence what an interviewee recalls based upon an erroneous belief concerning what is relevant. Similarly Sturmey (1996) notes that individuals typically have well rehearsed stories about their principle problem which they have repeated many times to people in the past. It is possible that a similar occurrence occurs for carers of those with learning difficulties.

However, if these scripts are incorrect, but guide what a respondent reports, possibly important information which is not seen as relevant (because it does not match the script) may not be reported by the interviewee. As a result, by requiring a respondent to "Report All" and to recall the observed event from a different perspective (Change Perspective) it may be possible to enhance the quality of recall gained at assessment by preventing this script based self-editing of information. It is important to note however, that use of the Change Perspective mnemonic must be accompanied by careful instruction to the interviewee to recall only what they actually observed, as adopting an alternative perspective may be misinterpreted as an invitation to fabricate an answer (Fisher & Geiselman, 1992).

In addition, it is possible that observers' beliefs and assumptions about challenging behaviour combine with actual event aspects to create a constructed composite of what happened. As a result, during interview, an interviewee's recollection of the topography of the behaviour may be "contaminated" by his or her script (belief) concerning challenging

behaviour, with the concomitant effect being that recollection is not only based upon what happened, but also what the interviewee believes about the challenging behaviour. The Reverse Order mnemonic of the CI may guard against this possibility (Geiselman & Fisher, 1985).

As scripts are likely to operate in a temporal / chronological fashion in order for an event to be made sense of (Alba & Hasher's, 1983; Rumelhart & Norman, 1983), by requiring a respondent to recall in a reversed order, script generated recall should be reduced, as the person has to rely on actual episodic memory instead. Therefore, if recall is influenced by an individual's belief about challenging behaviour, incorporating these mnemonics into a clinical interview / assessment may be a method by which, not only could more accurate information about the topography of an incident of challenging behaviour be gained, but script (belief) driven errors or omissions in recollection could be prevented or minimised.

One final reason to expect that the incorporation of components of the CI into clinical assessments will facilitate recall, concerns its focus upon effective questioning methods (Fisher & Geiselman, 1992). Assessment formats based upon a series of specific closed and forced choice questions which limit the scope of responses, as found in many functional assessments (e.g., the FACT, MAS, QABF or FAST), are likely to produce less detailed and accurate recall than questions incorporated into a more open, dynamic and interviewee compatible assessment

procedure (Fisher & Geiselman, 1992; Lipton, 1977). We can see then that the CI, with its solid theoretical base, and its use of a free flowing and dynamic interviewing format, could be expected to enhance the quality of information elicited during interview or assessment.

In the light of known limitations (e.g., incomplete or erroneous recollection) in respondent based assessments (e.g., Crawford, Brockel, Schauss, & Miltenberger, 1992; Paclawskyj, Matson, Rush, Smalls, & Vollmer, 2001; Toogood & Timlin, 1996), several authors have emphasised the importance of using multiple respondents (e.g., Emerson, 2001; O'Neill, et al., 1990) or of being aware of factors that influence the quality and detail of information elicited (Sturmey, 1996).

The use of multiple respondents as suggested by Emerson (2001) and O'Neill, et al. (1990) raises an interesting question. Research on individual differences (e.g., Emmett, Clifford, & Gwyer, 2003; Hosch, 1994; Rabbitt, & Yang, 1996) suggests that individuals differ in their ability to accurately recall event information. Thus, one interviewee may be of more clinical use than another when trying to elicit information concerning an incident of challenging behaviour. Of importance here is the possibility that clinicians could identify individuals who are likely to be accurate and place more emphasis in the recollections of those individuals. Within the legal system, one area of research that has attempted to do this has focused upon the use of interviewee confidence in recall accuracy as a predictor of subsequent accuracy.

Although the findings are conflicting (Luus & Wells, 1994; Well, Olsen, & Charman, 2002; Wells & Murray, 1984), it does make intuitive sense (e.g., Neil v Biggers, 1972) that interviewees who are confident about the veracity of their recollections are more likely to be accurate, compared to interviewees who are less certain (confident) of their accuracy. Therefore using espoused ratings of confidence to "weight" interviewee responses, may be one way in which Sturmey's (1996) comments, concerning the factors which influence the quality of recall, could be clinically useful.

From the above review we can see that by drawing upon evidence from the psycho-legal domain concerning the interviewing of witnesses and victims of crime, it may be possible to enhance current clinical methods through incorporating aspects of the CI into clinical use. Further, by exploring the known influence of scripts and schemas upon recollection, it was speculated that an individual's beliefs about an individual and their behaviour, may influence how that individual's behaviour is remembered. Drawing these two areas together, it was then speculated how aspects of the CI may guard against such processes occurring. Finally, as the section closed, how an individual's confidence in the veracity of their recollection may be of use to a clinical psychologist when considering the accuracy of elicited recollections was touched upon.

In conclusion, this research can be seen to have four key aims. Firstly, to explore the possibility that modification of a clinical interview format, by including components of the CI, will enhance the quality of information

elicited. Secondly, the research aims to explore the possible influence of beliefs upon recall, with it being predicted that the negative contextualisation condition will be responsible for a significant increase in errors compared to the neutral contextualisation condition. The research's third aim will explore the possibility that any negative influence of belief upon recall will be guarded against by use of the cognitive mnemonics. That is should the manipulation concerning beliefs be successful, it would be expected that fewer errors will be reported under the MNSCI than the NSCI.

With regards exploration of these three aims, it is important to note that a number of differing types of control interview / control condition can be utilised (e.g., Gwyer, 2007). Thus while initial exploration of these aims will be made through comparison of the MNSCI and NSCI, further exploratory analysis will also be conducted (i.e., utilising a "typical" interview, as a function of the cognitive mnemonics in isolation, and when a style of questioning which might appear within a functional assessment (e.g., FATQs) is used) so as to thoroughly explore the data

To close, the final aim of the research will examine (as a two tailed hypothesis) if modification of interview or beliefs about behaviour influence interview measures (e.g., number of questions asked, length of interview, amount of feedback given) and if interviewee confidence ratings of accuracy are influenced by interview or belief about behaviour and are significantly and positively correlated to actual accuracy.

Method

Participants

Participants were first year psychology undergraduate students recruited from the University of Winchester. One-hundred and ten students watched the stimuli material in eight group sittings of between fifteen and twenty-five students per sitting. Volunteers to take part in the investigation were then sought from those who watched the stimuli material.

In order to ensure that participants had no pre-existing beliefs about challenging behaviour or Asperger's syndrome, those with personal experience in these areas were excluded from the investigation. Sixty-two students were subsequently interviewed about their recollection of the stimuli. All but five students were female. Participants did not receive payment or credit for participation in the research.

Interviewers and Interview Training

Three interviewers interviewed all participants. Two female interviewers, with no prior experience in clinical psychology, and the author conducted the interviews. Both female interviewers were blind to the nature of the stimuli material, the contextualisations presented to participants and the aims of the experiment. The third interviewer, the author, was not blind to the stimuli material, the aims of the experiment or the contextualisations and conducted all interviewer training. Prior to training, both female interviewers were provided with an interview training and practice manual and a number of functional analysis assessment formats by the author

(the third interviewer). The two female interviewers then received two separate days of training in the interview formats from the author, who has extensive experience in interview and listening skills training.

The two female interviewers were provided with training material to take away and study in their own time and instructed to conduct practice interviews. The author / trainer was available via email communication to answers any questions. The week prior to the interviews commencing a "booster" session was held whereby the training received and material provided was reviewed. Using stimuli from previous research (Hasting, Boulton, Monzani, & Tombs, 2004) both interviewers conducted a practice interview and were given feedback by the author.

Training consisted of general interview skills training for recall of episodic events based upon the CI training manual developed by Gwyer and Clifford (1997). Listening skills training was based upon the Samaritans training package for listening skills as well as generic counselling / clinical skills. Both female interviewers also received training in relevant aspects of working with challenging behaviour and functional analysis with specific reference to a number of clinical texts (Durand & Crimmins, 1992; Emerson, 2001; Emerson, et al. 1998; Iwata, 1995; O'Neill, et al., 1990; Sturmey, 1996). On completion of the first day's data collection, the day's audio taped conducted interviews were reviewed by the author with both female interviewers receiving detailed individual feedback and guidance as to their performance prior to the next interviews being conducted.

Interviews were monitored by the author throughout the data collection phase of the investigation, with feedback to interviewers being provided when appropriate.

Interview Conditions

Two clinical interview techniques were created and utilised for the purposes of this research. The first was a Non Specific Clinical Interview (NSCI), which is a generic clinical interview based upon several published materials (i.e,. the O'Neill's Functional Analysis Interview format [O'Neill, et al., 1990], the Modified Functional Analysis Screening Tool [Iwata, 1995] and the Motivational Assessment Scale [Durand & Crimmins, 1992]) as well as elements from other clinical texts (e.g., Emerson, 2001; Emerson, et al., 1998; Sturmey, 1996), but one which does not contain the cognitive mnemonics of the Cognitive Interview. The second interview was in all aspects identical, but had been modified to contain the cognitive mnemonics of the Cognitive Interview. The format of each interview is presented in Table 1.

Both interview formats contained specific Functional Analysis type questions, which where based upon those utilised by O'Neill, et al. (1990), Iwata (1995) and Durand and Crimmins (1992) but not specifically from any one approach. These questions were asked at the end of each interview protocol. (A complete interview protocol for both interviews is presented in Appendix A).

Table 1: A Summary of Procedures for the Non Specific Clinical Interview (NSCI) and the Modified Non Specific Clinical Interview (MNSCI)

Non Specific Clinical Interview (NSCI)	Modified Non Specific Clinical Interview (MNSCI)
Personalise the interview and explain purpose. Encourage interviewee to:-	Personalise the interview and explain purpose. Encourage interviewee to:-
- try hard and concentrate - actively generate information - not to make anything up	- try hard and concentrate - actively generate information - not to make anything up
	- *Report All* they can remember even the seeming irrelevant or partial
Explore interviewee feelings and thoughts about the stimuli	Explore interviewee feelings and thoughts about the stimuli
Ask for pre interview confidence rating	Ask for pre interview confidence rating
Transfer control of the interview to the interviewee*	Transfer control of the interview to the interviewee*
	Recreate Context
Begin free recall	Begin free recall
Request a motivated second recall attempt	Request recall from a *Changed Perspective*
Request a motivated third recall attempt	Request recall from a *Changed Order*
Use listening skills to demonstrate listening and ask the interviewee to elaborate on the responses, ask specific questions to fill in gaps in recall. Activate and probe image codes	Use listening skills to demonstrate listening and ask the interviewee to elaborate on the responses, ask specific questions to fill in gaps in recall. Activate and probe image codes
	- *Using cognitive mnemonics as aids*
Ask specific Functional Analysis type questions if applicable (i.e., only if scene was remembered) Take post interview confidence rating	Ask specific Functional Analysis type questions if applicable (i.e., only if scene was remembered) Take post interview confidence rating
Close interview	Close interview

Cognitive mnemonics in italic. *That is to act as a facilitator in a way to help the interviewee remember (Fisher & Geiselman, 1992)
Stimulus Material

The stimuli consisted of a series of five staged events focusing upon a child (Paul) in five different school environments. Three child actors were recruited to play all of the child parts, with three adults acting the part of teachers. The event was created by the University of Southampton and has been used in previous research (Lewendon, 2004).

Event Contextualisations

In order to create a belief about challenging behaviour, participants were read an event contextualisation which "explained" some of the behaviour they were about to see in the video. Half of the participants received a "negative" contextualisation and half received a "neutral" contextualisation.

In the neutral event contextualisation Paul's behaviour was explained as being the result of him having Asperger's syndrome, with him occasionally becoming "stuck" in certain patterns of behaviour that he repeats many times. Paul was also indicated to have some repetitive language ability, but to be unable to communicate well with language. They were also told that Paul finds it difficult to interact with others and that he is not able to make eye contact or gestures to initiate or maintain social interactions, but that this behaviour was not deliberate or intentional.

In the negative event contextualisation, Paul was described as a very difficult person, whom people find hard to understand or be around. He was described as frequently acting in childish ways and as doing things to annoy people. They were told that Paul doesn't like to speak or listen to people and that this was deliberate. Paul was also described as not being a sociable person and as someone who doesn't interact well with others because he isn't interested in people and is quite stubborn and difficult, especially if he doesn't get his own way. Paul's behaviour was described as deliberate and intentional. Event contextualisations are presented in Appendix B.

Creation and Ecological Validity of Event Contextualisations

The content of both contextualisations was based upon the comments of different staff members encountered whilst the author was on his Learning Difficulties placement about an individual in their care. The neutral contextualisations emanated from Learning Support staff at a higher education institute where the same individual was studying. The negative contextualisation was based upon an expressed view held by one staff member at the individual's residential home.

Both event contextualisations were piloted amongst peers to gauge their effectiveness. The consensus was that the negative event contextualisation indeed made Paul seem like "*an un-likable and difficult*

individual" while the neutral contextualisation made him seem like "*an individual who needs support*".

Procedure

Ethics Committee approval was obtained from the School of Psychology, Ethics Committee, University of Southampton (Appendix C). Prior to the presentation of the stimulus, classes were informed that their participation in a research project was being requested and volunteers to view the stimuli sought. A brief outline of the stimuli material was presented, and those not wishing to view it or to take part were given the opportunity to leave. Participants were requested to pay attention to the presented stimuli and all other distractions were removed. Participants were instructed not to talk amongst themselves during the presentation of the videotape.

Before showing the videotape, the author read one of the contextualisations to the group while simultaneously presenting a written version via an overhead projector. The videotape was presented on a large screen in full view of all participants. To ensure engagement, participants were given the opportunity to comment on the contextualisations and to give their thoughts about such behaviour.

In order to keep participants naive about the aims of the research, after observing the event, participants were requested to record the three most

important things they remembered about the video. On completion of this volunteers were requested to sign up for an interview at a time and date convenient to themselves. Those with prior experience of challenging behaviour or Autism / Asperger's syndrome were thanked for their offer of participation but excluded from the study.

On arrival for their interview, participants were informed that they would be interviewed about what they could remember of the stimuli, and the consent form was reviewed and signed by each of the participants (a copy of participation consent forms is presented in Appendix D). All interviews were conducted on a one-to-one basis in a small room free from distractions. All interviews were audio taped for scoring purposes and followed an interview protocol to ensure consistency.

During the interview, interviewers followed an instruction sheet (see Appendix E) and an interview protocol (see Appendix A) specifically designed for each type of interview. The interviewer instruction sheet reminded interviewers of the practical things that they must complete for each interview (e.g., to check the tape recorder is working). The interview protocol sheet contained cues to prompt the interviewer to use the appropriate mnemonics or recall attempt, provided a number of Functional Analysis type questions as well as providing prompts for other variables of interest to be recorded (i.e., their confidence in their ability to accurately remember the event).

On completion of data collection all participants were debriefed as to the aims of the investigation. A copy of participant debriefing sheet is presented in Appendix F.

Scoring and Coding

The scoring and coding system was a version of that developed by George (1991) and George and Clifford (1992), which was modified to meet the clinical requirements of this research. Interviews were scored directly from tape by the author using a transcript of the stimuli material which was marked for clinical relevance. Only event details that had been deemed clinically relevant were scored and analysed for the purpose of this research. This scoring system is a standard scoring method when assessing the effectiveness of interview procedures in the area of psycho-legal research and the researcher has used this system in two published studies (Gwyer & Clifford, 1997; Memon, Holley, Milne, Kohnken & Bull, 1994).

Clinical Relevance

In order to provide a scoring framework of clinical relevance, prior to scoring, the stimuli material was shown to two practicing Clinical Psychologists in the Learning Difficulties area who acted as clinical raters. Clinical raters were simply required to highlight on the script of the event what event aspects they considered to be clinically relevant to their

understanding of Paul. Clinical raters were not asked to interpret or formulate the behaviour and to avoid biasing their ratings no mention was made of Asperger's syndrome, once completed marked scripts were posted back anonymously. A copy of the request to Clinical Psychologists for assistance in the creation of clinical scoring is presented in Appendix G.

Once the marked transcripts were returned, a consensus approach was taken in that an item was considered clinically relevant if both raters indicated its relevance. Any ambiguities were resolved through discussion between the author and dissertation supervisor who has extensive experiences in the area of Asperger's syndrome and Learning Difficulties. A summary of the contents of the stimuli material is presented in Appendix H.

Elicited recall was scored as either correct or incorrect. Correct recall was classified as any information recalled by the interviewee which was present within the event. Incorrect recall consisted of elicited information which was either inaccurate but which occurred or information which did not occur. Repeated information was not scored.

Recall was scored as "free", "cued" and "total". Free recall is recall elicited from the requests to remember as much about the event as possible (e.g., the initial recall attempt, recall from a Changed Perspective and recall from a Changed Order in the MNSCI, or the three recall attempts in

the NSCI). Cued recall refers to information elicited through specific questioning. Total recall refers to the total amount of recall elicited (i.e., free recall + cued recall).

Finally, a tally was also kept of the number of questions asked (and associated recall) and the amount of feedback / encouragement given by the interviewer during the interview. Interviewee's confidence ratings were also recorded pre and post interview.

Design

The study involved a 2 X 2 randomised factorial design, where the factors are; Contextualisation of behaviour (Negative and Neutral) and Interview (Non Specific Clinical Interview [NSCI] or Modified Non Specific Clinical Interview [MNSCI]). The experiment is a between-subjects design, and the type of interview was counterbalanced across participants.

Results

Data Management

Before data analysis was conducted a number of preliminary basis checks were undertaken. These were undertaken to ensure that data was reliable scored and coded; to assess the suitability of the data for analysis; to rule out the possibility of interviewer, practice and / or fatigue effects upon the data; and finally, to explore the possible confound that may have occurred as a result of the unequal delay period that occurred between observing the event, and being interviewed about the event.

In order to explore the aims of this investigation, analysis of the effect of the following independent variables Contextualisation (Neutral or Negative) and Interview (MNSCI or NSCI) upon the dependent variables; correct recall and errors reported for free, cued and total recall and recall elicited from Functional Analysis Type Questions (FATQ) was conducted. This collection of dependent variables will be hereafter referred to as "recall measures". The investigation also aimed to explore the possible influence of the independent variables upon interview length, number of questions asked, amount of feedback given and interviewee confidence in accuracy of reported details. These dependent variables are collectively referred to as "interview measures".

Multivariate analysis (MANOVA) was used when more than one dependent variable was analysed (e.g., recall and interview measures) in

order to prevent Type one errors occurring. Univariate statistics (ANOVA) were then conducted on each of the dependent variables separately to fully explore the data.

Overview of analysis

In order to investigate the paper's first (the effect of modification of the interview), second (the effect of Contextualisation) and third aim (to explore the possibility that use of the cognitive mnemonics may guard against the possible detrimental influences of beliefs upon recollection) upon recall measures, MANOVA and subsequent follow-up univariate analysis (ANOVA) were conducted using Contextualisation and Interview as the independent variables, with recall measures as the dependent variables.

Due to the unique construction of the interview conditions utilised within this research, the effectiveness of the MNSCI (i.e., aim one) was also explored in relation to a "typical" clinical interview through use of a 2 (Interview) * 2 (Contextualisation) MANOVA with follow up univariate statistics being conducted. Further 2 (Interview) x 2 (Contextualisation) analysis was then conducted to explore the effectiveness of each of the cognitive mnemonics in isolation, the effects of belief and their possible interaction upon recollection (i.e., to compare correct recall and error rates for each mnemonic in isolation as a main effect and as an interaction with the Contextualisation manipulation).

Following on from this, a two way MANOVA was conducted in order to explore the possible effects of Interview (i.e., aim one) and Contextualisation (i.e., aim two) and their possible interaction (i.e., aim three) upon recall which might be elicited form functional assessment formats (i.e., Functional Analysis Type Questions [FATQ]).

With regards the final aims of the research (the possible influence of belief and interview upon interview measures), a 2 (Interview) * 2 (Contextualisation) MANOVA was conducted upon the number of questions asked, the amount of feedback given and the length of interview, with subsequent univariate analysis being used to explore these results further.

In order to explore the effect of Interview and Contextualisation upon confidence ratings of accuracy, a 2 (Interview) * 2 (Contextualisation) MANOVA and follow-up univaraite analysis, was conducted upon pre- and post-interview confidence ratings of accuracy, after which paired comparisons were conducted between pre- and post- interview ratings of accuracy. Finally, in order to explore the relationship between confidence and accuracy, Pearson's correlations were conducted between confidence ratings of accuracy and actual accuracy.

Preliminary Analysis

Before analysis was undertaken, a number of preliminary bias checks were conducted to; (1) assess the reliability of the scoring and coding of

the data, (2) assess the suitability of the data for analysis, (3) rule out the possibility of interviewer effects, (4) rule out the influence of practice or fatigue effects and to (5) explore the possible confound that occurred as interviews were conducted at uncontrolled time intervals. Due to word length constraints these preliminary bias checks are presented in Appendix I and summarised below.

Summary of Preliminary Bias Checks

1) Following the method outlined by Davis, McMahon & Greenwood (2004) analysis concerning the reliability of interview coding and scoring (i.e., code-recode reliability, and inter-rater reliability) indicated that the interviews were accurately and reliably coded and scored. (see Appendix I section 1.0).

2) Analyses indicated that the majority of data was normally distributed and of equal variance. In light of the failure to normalise the data through square root and logarithm transformation analysis, and the documented robustness of parametric tests to have these assumptions violated (e.g., Howell, 2002) parametric data analysis was conducted on the original data and no transformations of the data took place. (see Appendix I section I.2.0).

3) With regards to the possible influence of interviewer, results indicated that recall and interview measures were not influenced by interviewer effects. Specifically, no interviewer gave substantially longer interviews,

more feedback or asked more questions than any other interviewer. Those significant differences which did occur (i.e., interview length and the amount of feedback given) were small in magnitude (e.g., a difference of four minutes between interviewers two and three's mean interview length) and as such are not seen as a threat to the validity of the data. Thus interviewer was responsible for a significant effect upon the amount of information recalled. (see Appendix I section I.3.2).

4) Investigation of the possible influence of practice and fatigue effects, indicated that recall and interview measures were not influenced by interview order. Additionally there were no increases in these variables as the interviews progressed (i.e., practice effects) nor were there drops in these variables as the interviewers neared completion of the investigation (i.e., fatigue effect). That is, while there was no difference in the amount of correct free, correct cued, incorrect cued, correct total and incorrect total recall elicited as the study progressed, there was a significant effect of Interview order for incorrect free recall. However, due to the number of non significant results observed, this was not seen as a threat to the validity of the data. (see Appendix I section I.4.0).

5) A 2 (Contextualisation) * 2 (Interview) ANOVA upon delay was conducted to ensure that the experimental manipulations were matched for delay[1]. Results proved non significant for Contextualisation ($F<1$),

[1] In light of the known impact of delay upon memory (e.g., Ebbinghaus, 1885; Ellis, Shepherd and Davies, 1980 and Wickelgren, 1976), within this study to ensure delay had not confounded the experimental manipulations of Contextualisation and Interview, a check was undertaken to ensure that experimental conditions were matched for delay.

Interview (F<1) and the interaction Contextualisation * Interview (F<1) indicating that matching across the experimental conditions had occurred. See Appendix I section I.5.0 for table of results.

Recall Measures

The Effect of Contextualisation and Interview Technique Administered Upon Recall

In order to explore the first, second and third aims of this paper, a 2 (Contextualisation) * 2 (Interview) multivariate analysis (MANOVA) was conducted upon correct and incorrect free and cued recall. Analysis proved non significant for the main effect Contextualisation ($F(4,55) = 1.1$, $p = 0.7$, Wilks' Lambda $\lambda = 0.93$), but significant for the main effect of Interview ($F(4,55) = 4.2$, $p = 0.005$, Wilk's $\lambda = 0.77$). These two main effects did not enter into a significant interaction ($F<1$, Wilk's $\lambda = 0.96$).

Further univariate analysis (ANOVA) upon the main effect Contextualisation (Neutral or Negative) proved non significant for correct free recall (F(<1), correct cued recall (means F(<1), incorrect free recall (F(<1) and incorrect cued recall ($F(1,58) = 3.2$, $p = 0.73$). Means and standard deviations presented in Table 2.

Table 2. Mean Correct and Incorrect Free and Cued as a Function of Contextualisation (Neutral or Negative).

Recall	Neutral		Negative			
	Mean	SD	Mean	SD	F	df
Multivariate λ = 0.93					1.1	4,55
Correct						
Free recall	56.6	15.1	57.6	15.8	<1	1,58
Cued recall	11.9	7.8	12.6	9.8	<1	1,58
Incorrect						
Free recall	6.6	4.2	6.5	3.4	<1	1,58
Cued recall	3.4	2.6	2.2	2.0	3.2	1,58

With regards the main effect of Interview, univariate analysis (ANOVA) indicated a significant main effect of Interview for correct free recall ($F(1,58) = 16.3$, $p = 0.00$) with more correct free recall being elicited from the MNSCI ($M = 65.1$, $SD = 13.6$) than the NSCI ($M = 50.8$, 13.6). The difference between the two interview conditions proved non significant for correct cued recall ($F(1,58) = 2.6$), incorrect free recall ($F<1$) and incorrect cued recall ($F(1,58) = 1.5$). Mean scores are presented in Table 3.

Table 3. Mean Correct and Incorrect Free and Cued as a Function of Interview Technique.

Recall	MNSCI		NSCI			
	Mean	SD	Mean	SD	F	df
Multivariate λ = 0.77					4.2**	4,55
Correct						
Free recall	65.1	13.6	50.8	13.6	16.6*	1,58
Cued recall	10.2	7.3	13.8	9.7	2.6	1,58
Incorrect						
Free recall	6.6	3.4	6.5	4.2	<1	1,58
Cued recall	2.4	2.2	3.2	2.5	1.5	1,58

** p = .05; * p< .001

The interaction Contextualisation * Interview proved non significant for correct free recall (F<1), incorrect free recall (F(158) = 1.5), correct and incorrect cued recall (both F's <1). Table of means is presented in Appendix J.

Separate analysis was conducted to assess the affect of Contextualisation and Interview upon total recall. MANOVA results proved significant for Interview (F(2,57) = 5.7, p = 0.006, Wilk's λ = 0.83) but non significant for Contextualisation (F<1, Wilk's λ =0.98) and the interaction Contextualisation * Interview (F(2,57) = 1.2, p = 0.3, Wilk's λ =0.96).

Further univariate analysis indicated a significant main effect of Interview for total correct recall ($F(1,58) = 11.0$, $p = 0.001$; MNSCI M = 75.3, SD = 12.6; NSCI M = 64.6, SD = 12.2) but proved non significant for total incorrect recall ($F<1$, MNSCI M = 8.9, SD = 4.1; NSCI M = 9.7, SD = 5.0). The main effect of Contextualisation proved non significant for both correct total recall ($F<1$, Neutral M = 68.9, SD = 12.6; Negative M = 70.2 SD = 14.5) and incorrect total recall ($F<1$, Neutral M = 10.0. SD = 5.1; Negative M = 8.7 SD = 4.1).

With regards the interaction Interview * Contextualisation, results proved non significant for total correct recall ($F<1$; Neutral MNSCI M = 75.6, SD = 9.9; Negative MNSCI M= 75.2, SD = 15.2; Neutral NSCI M = 63.7, SD = 12.1; Negative MNSCI M = 65.7, SD = 12.6) and total incorrect recall ($F(1,58) = 2.3$, $p = 0.1$; Neutral MNSCI M = 8.6, SD = 4.3; Negative MNSCI M = 9.3, SD = 4.0; Neutral NSCI M = 11.1, SD = 5.5; Negative MNSCI M = 8.2, SD = 4.2)

The Effects of Multiple Retrievals

In order to compare the effectiveness of the MNSCI (i.e., aim one) with a more "typical" clinical interview (i.e., one based upon one free recall narrative and follow-up questions) and the effects of each of the cognitive mnemonics (i.e., aim three), further exploratory 2 (Interview) x 2 (Contextualisation) analysis was conducted. Use of Contextualisation in this analysis also allowed aim two and three to be explored.

Analysis revealed that modifying clinical interviews through inclusion of the cognitive mnemonics was an effective way of enhancing recall compared to a "typical" clinical interview. Additionally, the Context Reinstate and Change Order mnemonics were found to be an effective way by which correct recall could be elicited without an increase in the number of errors reported. The Change Perceptive mnemonic proved non significant for both correct and incorrect recall. Contextualisation proved non significant as a main effect and interaction. See Appendix K.

The Effect of Contextualisation and Interview Upon Specific Functional Analysis Type Questions (FATQ)

Before presenting the results of this analysis it is important to note that due to the "checklist" nature of this type of questioning (i.e., non interviewee compatible), its position at the end of the interview, and the scoring of recall (regardless of previous recall), this analysis is presented as separate to the analysis of interviewee compatible recall (i.e., that obtained from the MNSCI or NSCI) and was not included in the previously presented analysis. This analysis furthers the exploration of aims one, two and three, by considering the possibility that modification of interview, beliefs about behaviours or their interactions, are important considerations when functional analysis type assessments (e.g., FATQs), which can be seen as very different to the previous types of interview techniques explored (e.g., MNSCI, NSCI or "typical") are used.

MANOVA results proved non significant for Interview ($F<1$, Wilk's $\lambda = 0.97$), Contextualisation ($F<1$, Wilk's $\lambda = 0.97$) and the interaction Contextualisation * Interview ($F<1$, Wilk's $\lambda = 0.97$).

With regards correct recall elicited through use of FATQ's, follow up univariate analysis (ANOVA) proved non significant for Interview ($F<1$; MNSCI FATQ M = 23.5, SD = 8.1; NSCI FATQ M = 22.3, SD = 7.5), Contextualisation ($F<1$; Neutral M = 23.4, SD = 8.0; Negative M = 22.2, SD = 7.5) and the interaction Interview * Contextualisation ($F<1$; Neutral MNSCI FATQ M = 23.2, SD = 7.9; Negative MNSCI FATQ M= 23.7, SD = 8.6; Neutral NSCI FATQ M = 23.5, SD = 8.3; Negative MNSCI FATQ M = 20.9, SD = 6.4).

With regards incorrect recall, results proved non significant for Interview ($F(1,58) = 1.8$, $p = 0.2$; MNSCI FATQ M = 9.6, SD = 3.4; NSCI FATQ M = 11.1, SD = 4.4), Contextualisation ($F(1,58) = 1.4$, $p = 0.2$; Neutral M = 9.8, SD = 3.8; Negative M = 11.1, SD = 4.3) and the interaction Interview * Contextualisation ($F(1,58) = 1.1$, $p = 0.4$; Neutral MNSCI FATQ M = 9.6, SD = 3.4; Negative MNSCI FATQ M = 9.8, SD = 3.7; Neutral NSCI FATQ M = 9.9, SD = 4.2; Negative MNSCI FATQ M = 12.2, SD = 4.5).

Interview Measures

The final analyses of this research aimed to explore if modification of interview, or beliefs about behaviour influenced the number of questions asked, the length of interview, amount of feedback given or espoused

ratings of confidence, and if these confidence ratings were significantly and positively correlated to actual accuracy (i.e., aim four of the paper).

A 2 (Interview) * 2 (Contextualisation) MANOVA was conducted upon the number of questions asked, the amount of feedback given and interview length. Analysis proved significant for Interview ($F(3,56) = 3.5$, $p = 0.02$, Wilk's $\lambda = 0.84$) but non significant for Contextualisation ($F<1$, Wilk's $\lambda = 0.99$) and the Interview * Contextualisation interaction ($F<1$, Wilk's $\lambda = 0.99$).

Univariate analysis for Interview proved significant for the amount of feedback given ($F(1,58) = 10.1$, $p = 0.002$) with more feedback being given in the MNSCI (M = 16.5, SD = 2.4) than the NSCI (M = 14.4, SD = 2.5), but non significant for interview length ($F(1,58) = 3.3$, $p = 0.07$; MNSCI M =30:10, SD =3.9, NSCI M =28.15, SD = 3.8) and the number of questions asked ($F<1$; MNSCI M=13.0, SD=2.8, NSCI M =12.8, SD=4.8).

Analysis for Contextualisation proved non significant for the number of questions asked ($F(1,58) =2.1$, $p = 0.88$; Neutral M = 13.6, SD =3.1, Negative M =12.2, SD =4.7), interview length ($F<1$; Neutral M = 28:30, SD =3.6, Negative M = 28.2, SD = 4.2) and the amount of feedback given ($F<1$; Neutral M = 15.5, SD =2.7, Negative M =15.3, SD =2.6). Analysis proved non significant for the interaction Interview * Contextualisation for the number of questions asked ($F<1$), interview length ($F<1$) and the amount of feedback given ($F<1$). Means are presented in Table 4.

Table 4. Mean Interview Measures as a Function of the Interaction Interview and Contextualisation

Interview measures	Neutral				Negative					
	MNSCI		NSCI		MNSCI		NSCI			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F	df
Multivariate λ = 0.99									<1	3,56
Length*	30:48	4.7	28:18	3.6	29:18	3.0	28.12	1.2	<1	1,58
Questions	13.9	2.4	13.4	3.5	12.1	2.9	12.3	5.9	<1	1,58
Feedback	16.8	1.9	14.4	2.8	16.1	2.8	14.5	2.3	<1	1,58

* of interview, minutes: seconds

The Effect of Interview and Contextualisation Upon Confidence Ratings of Accuracy

With regard the final aim of the research (to examine the strength of the relationship between interviewee confidence ratings of accuracy and actual accuracy), a 2 (Interview) * 2 (Contextualistion) MANOVA was conducted upon pre- and post-interview confidence.

Analysis proved non significant for Interview ($F<1$, Wilk's $\lambda = 0.98$), for Contextualisation ($F(2,56) = 1.5$, $p = 0.22$, Wilk's $\lambda = 0.99$) and the Interview * Contextualisation interaction ($F<1$, Wilk's $\lambda = 0.99$).

Further univariate analysis indicated that Interview technique administered did not influence pre- ($F(1,57) = 1.1$, $p = 0.29$; MNSCI M = 5.7, SD = 3.9, NSCI M = 5.3, SD = 1.4) or post ($F<1$, MNSCI M = 7.2, SD = 1.1, NSCI M = 7.0, SD = 1.2) interview confidence ratings of accuracy. Similar non significance results were obtained for Contextualisation (pre- ($F(1,57) = 2.6$, $p = 0.11$; Neutral M = 5.7, SD = 1.5, Negative M = 5.1, SD = 1.5; post ($F<1$), Neutral M = 7.1, SD = 1.2, Negative M = 7.1, SD = 1.1). Results for the interaction Interview * Contextualisation also proved non significant and are presented below in Table 5.

Table 5. Mean Pre-interview and Post-interview Confidence Ratings of Accuracy.

Interview measures	Neutral				Negative					
	MNSCI		NSCI		MNSCI		NSCI			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F	df
Multivariate $\lambda = 0.99$									<1	2,56
Pre	5.9	1.4	5.6	1.1	5.4	1.8	4.9	1.2	<1	1,57
Post	7.2	1.2	7.0	1.2	7.2	1.0	1.1	1.2	<1	1,57

Paired comparisons indicated that interviewees were significantly more confident after the interview (post-interview confidence) than prior to being interviewed (pre-interview confidence) with this remaining so for both interview conditions and both contextualisations. Mean difference and statistical results are presented below in Table 6.

Table 6. Pre and Post interview confidence rating of accuracy

	Mean difference	*t*
Overall	-1.7	*t*(60) = -8.6*
MNSCI	-1.5	*t*(27) = -5.0*
NSCI	-1.8	*t*(32) = -7.1*
Neutral	-1.3	*t*(30) = -4.6*
Negative	-2.0	t(29) = -8.0*

* p = 0.000

The Relationship Between Confidence and Accuracy

Using Pearson's correlation, the strength of the relationship between interviewees' confidence in their ability to accurately remember the event and their actual ability to do so was explored. Results, presented in Table 7, indicated that pre- and post- interview confidence in ability to accurately recall the event was not related to an actual ability to do so.

Table 7. The Relationship Between Pre- and Post-interview Confidence Ratings of Accuracy and Actual Accuracy

	Pre-interview confidence	Post-interview confidence
Overall	*r*(61) = 0.17	*r*(61) = 0.16
MNSCI	*r*(28) = 0.04	*r*(28) = -0.5
NSCI	*r*(33) = 0.22	*r*(33) = 0.31
Neutral	*r*(31) = 0.35	*r*(31) = 0.27
Negative	*r*(30) = 0.04	*r*(31) = 0.09

N in parentheses

Discussion

A principal aim of this research was to explore the possibility that modification of a clinical interview (by including the cognitive mnemonics of the CI) would enhance the quality of information elicited from an individual who has observed an incident of challenging behaviour. Results clearly indicated that such an enhancement is possible. Indeed as a percentage, inclusion of the cognitive mnemonics into a clinical interview increased the amount of clinically relevant correct recall elicited by 14.5%, with no increase in errors compared to an artificially created control condition (e.g., NSCI). Next the effects of modification were considered in comparison to a "typical" clinical interview.

Within this research, in order to prevent unequal recall attempts confounding analysis, the NSCI (which acted as the control condition) required interviewees to make three motivated free recall attempts to mirror the three attempts made in the MNSCI. In order to explore the effects of the MNSCI against a more "typical" clinical interview (i.e., one based upon one free recall narrative with follow-up questions), analysis compared the difference in recall between the MNSCI with a "typical" clinical interview (i.e., one that only included recall elicited from the first recall attempt and subsequent questioning). Analysis indicated that more correct recall, but also more errors, were elicited through use of the MNSCI compared to a "typical" clinical interview. To put these findings in context, use of the cognitive mnemonics in a MNSCI were responsible for

37% more correct recall than would be expected through use of a "typical" clinical interview, with only a slight increase in errors. Thus it can be seen that utilisation of the cognitive mnemonics in a clinical interview format (i.e., MNSCI) is responsible for a 37% increase in accuracy compared to a "typical" clinical interview; or a 14.5% increase compared to a comparable control clinical interview (i.e., NSCI).

Next the effectiveness of the Context Reinstate, Change Perspective and Reverse Order mnemonics were considered in more detail. Analysis indicated that both the Context Reinstate and Reverse Order mnemonics where responsible for an increase in correct recall without an increase (or protective decrease) in errors reported. Results proved non significant (for both correct and incorrect recall) for the Change Perspective mnemonic. It would seem then that the incorporation of the Context Reinstatement and Change Order mnemonics into clinical interviews is a relatively simple procedure by which a clinician can improve the quality of information elicited during a clinical interview / assessment.

Turning now to other possible advantages (over and above an enhancement in recollection) in using the cognitive mnemonics when interviewing individuals about incidents of challenging behaviour. It can be speculated, that it is possible that by requiring a respondent to recall the event from the perspective of the individual in question (i.e., Change Perspective) two beneficial things may occur. Firstly, if the respondent is required to imagine they have the same level of ability as the individual,

such a task may make the function of the individual's behaviour more apparent to the respondent, which would clearly be of benefit to subsequent formulations and functional assessment. Indeed Noone, et al. (2006) indicate that increased staff knowledge concerning the causes of challenging behaviour may be advantageous to the creation of functional hypotheses.

Secondly, such a task could make respondents more empathic and understanding to the experience of individuals who, due to his/her disabilities, are unable to communicate his/her needs and wishes effectively. Such a possibility is supported by the findings of Poorman (2002) who found that requiring students to role play an individual with a psychological disorder enhanced their empathy and understanding of that disorder. If such increased empathy and understanding occurs through use of the Change Perspective mnemonic and feeds through to more fulfilling and rewarding staff-client interactions, the benefits to all involved could be tremendous. In the absence of firm empirical evidence to support this notion, it is worth stating anecdotally that the author's use of the Change Perspective mnemonic (accompanied by therapeutic questioning concerning the evoked feelings and thoughts) with care staff at a residential home for adults with learning disabilities has indeed had both these effects.

On a slightly more negative note, Kemp, Miltenberger, and Lumley (1996) indicated that it is possible that staff may on occasion be selective about

what they disclose, with responses occasionally being more in line with those perceived as desirable and expected than with those that are factually accurate. Additionally, it is possible that staff at times engage in inappropriate and ineffective interventions and that when information is requested from them about this, they may attempt to provide more desirable and acceptable answers. Such "desirable" responses are very likely to be script driven (i.e., based upon a respondent's script of a "correct" answer). As scripts work in a chronological fashion, one way to prevent such script based responses (or make them harder to give) would be to ask the respondent to recall the event in a reverse order.

It must be stressed that at present these are speculations and that it is not being stated that the Reverse Order mnemonic is capable of detecting deception, or even that it should be used as such. Nor is it being said that the Change Perspective mnemonic is an educational tool capable of facilitating staff empathy or guiding functional assessments. However, if use of the Reverse Order mnemonic makes more socially "desirable", but factually inaccurate answerers harder to give, it is certainly worth exploring further. Similarly if the Change Perspective mnemonic aids staff understanding and empathic responding to those in their care, or aids functional assessment, it could be a valuable therapeutic tool and is similarly worth exploring.

In the light of the findings from this research, safe in the knowledge that these mnemonics do not significantly increase the reporting of errors, and

can be easily incorporated into a clinical interview format, these speculative assertions certainly seem worthy of empirical attention within the clinical setting. Furthermore, using procedures similar to those outlined by Hall (2005) or Yarbrough and Carr (2000), it is equally important to see if the benefits of the cognitive mnemonics in eliciting recall, feed through to more effective functional hypotheses or can be validated by subsequent analogue functional analysis. With this in mind the research also explored if the questioning style used in many functional assessment procedures (e.g., the FACT, MAS, QABF or FAST) would be influenced by the use of the cognitive mnemonics of the CI as incorporated into a clinical interview.

Findings indicated that use of the cognitive mnemonics did not result in an increase in correct recall elicited or a decrease in errors reported. It would thus seem then that the beneficial effects of the cognitive mnemonics do not occur when a more closed or forced choice questioning style is adopted (as may be found in some functional assessments). Such a finding maybe best understood in terms of Smith's (1988) Outshining hypothesis where the cues provided within the question, outshine any benefit obtained from use of the cognitive mnemonics. The influence of question style upon accuracy rates shall now be considered.

Previously it was speculated that an interview format that relies upon open, dynamic and interviewee compatible questioning styles, is likely to

produce more accurate recall than an assessment in which questions are incorporated into a checklist procedure based upon a series of specific closed and forced choice questions (Fisher & Geiselman, 1992; Lipton, 1977). While this was not directly manipulated within this research, this assertion can be tentatively supported by the higher accuracy rates (total correct recall / total recall [correct + incorrect]) achieved within the first open interview phase of questioning (i.e., 88.2% [89.6% MNSCI; 86.9% NSCI]) compared to the lower accuracy rates (i.e., 68.7% [70.7% MNSCI; 66.8% NSCI] found in the second functional assessment phase of questioning. Thus, it appears that using an open, free flowing and dynamic interviewee compatible questioning style, produces an accuracy rate 20% higher than that obtained through a series of specific closed and forced choice questions in a checklist type format. It is interesting to speculate what effect upon functional assessments and hypotheses this differing approach would have. That is, would a free flowing and dynamic format of assessment produce a more accurate functional assessment than one derived from a more rigid closed and force choice questioning style (e.g., Hall, 2005; Yarbrough and Carr, 2000).

Moving away from the influence of questioning style, this research also aimed to explore the possible influence of observer beliefs upon recollection of an incident of challenging behaviour. As the contextualisation utilised in this instance was presented around a specific individual, it was believed that a "person script" would be created and that this would influence recollection of that individual's behaviour (e.g.,

Anderson & Cole, 1990; Fiske & Taylor, 1984). Thus, due to the reduced personal experience of challenging behaviour the participants had, and the directing of the contextualisation to the specific individual in the stimuli material, it was proposed that two contrasting beliefs (neutral and negative) about the individual and his behaviour could be created with a concomitant influence upon recollection. However, analysis indicated no significant effect of event contextualisation (i.e., beliefs) upon any recall or interview measures as a either a main effect or interaction. As a result of this, our corollary concerning the possibility that these influences could be guarded against by the cognitive mnemonics (e.g., the third aim of this research) could not be examined.

Within this research, as prior beliefs were controlled for by exclusion of participants with previous personal experience of challenging behaviour, two explanations to account for the non significant findings of belief upon recall are possible. Firstly it may be assumed that observer beliefs about challenging behaviour do not influence subsequent recollections of incidents of challenging behaviour. Alternatively, this null finding may be due to the failure to successfully create a belief concerning challenging behaviour based upon a simple event contextualisation. In light of the theoretical bases which led to our hypotheses concerning the influence of beliefs upon subsequent recollection, this second explanation is appealing.

There are a number of additional possibilities to account for why belief based errors were not observed in this instance. Firstly, Fisher and Geiselman (1992) note that scripts and schemas may influence what an interviewee recalls based upon an erroneous script (belief) concerning what is relevant. As a result, participants presented with the negative contextualisation may have recalled more of the negative aspects, if they believed these were the salient aspects of the behaviour that the interviewer was interested in. However, in this instance all interviewees were explicitly instructed to recall as much as they could, only what they remembered, and not to make anything up or to recall what they thought had happened. It is therefore possible that in this instance this specific instruction was sufficient to prevent script (belief) based errors occurring. An experiment utilising a third interview condition, where these instructions were not given, would allow this possibility to be tested.

Secondly, it is possible that the event contextualisations were not sufficient to create a belief about the individual in question, as the information in the video presentation provided a stronger source of information from which to create a script concerning behaviour and hence the manipulation of belief was "outshone" (Smith, 1988). Such a claim may be supported by some of the qualitative comments made by interviewees. For example, a number of participants made the following type comments during interview "*Boy in film did not match description*" (Negative, NSCI) and "*What he read out about the boy causing trouble, made no sense, not much sense, but what he read out wasn't the kinda*

boy we saw in the video." (negative, MNSCI). Thus, had a negative script been created which was more in line with the behaviour of the target individual, negative effects of scripts may have been observed.

Further, the lack of any actual interaction with the individual in the stimuli may have also prevented the creation of a belief. This is in line with the comments of Cullen (2001) who suggests that it is the consequence of the behaviour upon staff which is a more salient influence on staff behaviour and beliefs than their attributions about the behaviour. Therefore as interviewees were passive observers in this instance they had no need to create a belief or attempt to understand the behaviour as they did not have to interact directly with it.

However, before concluding this section it is worth noting that when interviewees were asked if they believed the contextualisation influenced their recollection of the stimulus material, 84% in the Neutral condition and 40% in the Negative condition felt it had. Qualitative comments such as "*The story we heard before helped us look out for the things we were told might happen*" (Neutral, MNSI) were expressed when interviewees were requested to elaborate upon this. Additionally, interviewees who received the negative contextualisation were more likely to ascribe negative intent to the target individual's behaviour and define his behaviour as more aggressive. While qualitatively different (and important) this was not detectible within the quantitative analysis undertaken in this instance, which simply scored recall as correct or

incorrect. Thus, despite the null findings observed in this instance, the effect of beliefs upon recollection may still be an area worthy of investigation by studies which mitigate the observed limitations of the current investigation.

Moving away from the recall measures, the study next sought to explore how the number of questions asked, amount of feedback given and interview length was influenced by inclusion of the cognitive mnemonics and belief about behaviour observed. Findings indicated that modification of clinical interviews led to significantly more feedback being given to interviewees. It is likely that these increases were due to the "unusual" nature of the recall tasks undertaken within the modified clinical interview (i.e., to recall the event in a backward chronological order or from a Changed Perspective). Importantly the modification of the interview did not result in a significant increase in the time taken to conduct the interview or the number of questions asked. It appears then, that the benefits of modification (i.e., a significant increase in correct recall with out an increase in errors) do not come at a cost of additional time or effort in questioning and that beliefs about behaviour no not influence the dynamics of the interview process (e.g., the length of time taken to conduct an interview, the number of questions asked or feedback necessary to elicit recollection).

Finally, this research's fourth and final aim was to explore the possibility that interviewee confidence ratings of accuracy were reliable predictors of

subsequent accuracy. Results indicted that while interviewees' confidence in their ability increased as a result of being interviewed, confidence (pre or post interview) was not a reliable predictor of accuracy. While it may be intuitively appealing, it is important that when a clinical psychologist interviews a number of individuals, he/she does not place undue weight upon the veracity of recollection based upon an interviewee's confidence, as this confidence is unrelated to subsequent accuracy. This is consistent with evidence obtained within the forensic domain (Bothwell, Deffenbacher, & Brigham, 1987; Cutler, & Penrod, 1989; Gwyer & Clifford, 1997; 1999; 2000; Luus, & Wells, 1994; Wells, & Murray, 1984).

Before summarising the results obtained from this investigation, it is worth touching upon the possible impact of delay upon recollection. In this investigation the length of delay between observing the event and being interviewed was not manipulated. In order to prevent this confounding the analyses undertaken herein, delay was matched between the two main variables of interest (i.e., Contextualisation and Interview). In light of the known impact of delay upon memory (Ebbinghaus, 1885; Ellis, Shepherd and Davies, 1980, Wickelgren, 1976) this may be an avenue worthy of future exploration in future research. Such a planed exploration would be in line with Sturmey's (1996) assertion that it is important for clinical psychologists to know what variables impact upon the quality of information sought for clinical or functional assessments, with it being possible that delay may be one such variable.

Finally, from the evidence obtained within this study the following conclusions can be made. Firstly, the quality of information obtained from clinical interviews can be significantly enhanced by incorporating the cognitive mnemonics of the CI into current clinical interview methods. Importantly, these improvements in recollection occur without a significant impact upon the length of time it takes to conduct an interview or the number of questions that need to be asked. However, these beneficial effects do not occur when the assessment format consists of a series of closed or force choice questions (e.g., FATQ).

Secondly, while interviewee confidence may be an intuitively appealing guide to accuracy (e.g., Neil v Biggers), it is not related to subsequent accuracy. Finally, while no effects of staff beliefs upon recollection were observed in this instance, in the light of the known influence of beliefs upon memory and the noted methodological shortcoming of this study, this remains an area worthy of future research.

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Appendices

Appendix A: Interview protocols

Non Specific Clinical Interview

Interviewee name:_____ Interviewer name: _____

Time delay: one or two (please circle) Date of interview : ___/___/2005

Time started: _____ am / pm Interview Number: _____ Tape side A / B

1) Personalize the interview and explain purpose.

2) Create rapport and encourage interviewee to:-
   - try hard and concentrate
   - actively generate information
   - not to make anything up

Feelings, thoughts and confidence

a) What did you feel when watching the video? (prompt for feelings if necessary)

.....

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.....

b) What did you think when watching the video? (prompt for thoughts if necessary)

.....

.....

.....

.....

.....

.....

c) How confident are you that you will accurately remember what happened? __
1 (low) to 10 (high)

3) Transfer control of the interview to the interviewee

4) Begin **free recall** (take notes to ask follow up questions)

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5) Request a motivated recall for a second time (take notes to ask follow up questions)

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.....

6) Request a motivated recall for a third time (take notes to ask follow up questions)

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.....

.....

7) Ask specific questions to fill in gaps if not already described

Remember to remind the interviewee to:-

- try hard and concentrate;
- actively generate information;
- not to make anything up;

Use the prompts (try hard and concentrate, actively generate information, not to make anything up, remember as much as they can) and your listening skills when you require the interviewee to elaborate on the responses to the following questions.

Remember: Questions can only be asked for scene the interviewee has remembered.

Ask the interviewee to elaborate their responses (e.g., can you tell me more about that, what happened after that, what did you think when that happened)

8) Did the person engage in the behaviour because they were being ignored?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

9) Did the person engage in the behaviour when access to a preferred (desired) activity was denied or removed?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

10) Did anyone try to engage the person as a result of their behaviour?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

11) Did the behaviour occur when the person was asked to perform a task?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

12) Did the person engage in the behaviour when no-one was watching?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

13) Did the behaviour involve anyone else?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

14) Did the behaviour involve any objects?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

15) Did anything happen to the person as a result of the behaviour?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

16) Did anything cause the behaviour?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

Confidence and end.

a) How confident are you that you have accurately remember what happened? _
1 (low) to 10 (high)

17) Close interview and answer any questions the participant has about the interview.

18) Debrief participants and ask them not to disclose the aims of the study to others who may be taking part.

Modified Non Specific Clinical Interview

Interviewee name:_____ Interviewer name: _____

Time delay: one or two (please circle) Date of interview : ___/___/2005

Time started: _____ am / pm Interview Number: _____ Tape side A / B

1) Personalize the interview and explain purpose.

2) Create rapport and encourage interviewee to:-
   a. try hard and concentrate
   b. actively generate information
   c. not to make anything up
   d. **report all** they can remember even the seeming irrelevant or partial

Feelings, thoughts and confidence

a) What did you feel when watching the video? (prompt for feelings if necessary)

.....

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.....

.....

.....

b) What did you think when watching the video? (prompt for thoughts if necessary)

.....

.....

.....

.....

.....

.....

c) How confident are you that you will accurately remember what happened? __
1 (low) to 10 (high)

3) Transfer control of the interview to the interviewee

4) **Recreate context** of the video (explicit and specific questioning, thoughts and feelings)

5) Begin **free recall** (take notes to ask follow up questions)

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.....
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.....
.....
.....

6) Request recall from a **changed perspective** (take notes to ask follow up questions)

.....
.....
.....
.....
.....
.....
.....

7) Request recall from a **changed order** (take notes to ask follow up questions)

.....
.....
.....
.....
.....
.....
.....

8) Ask specific questions to fill in gaps if not already described

   i. Using mnemonics, **context reinstate** and **report all** as aids

Remember to remind the interviewee to:-

- try hard and concentrate;
- actively generate information;
- not to make anything up;
- **report all** they can remember even the seeming irrelevant or partial

Use the cognitive mnemonics again (Context Reinstate, Change Order, Change Perspective), the prompts (try hard and concentrate, actively generate information, not to make anything up, remember as much as they can) and your listening skills when you require the interviewee to elaborate on the responses to the following questions.

Remember: Questions can only be asked for scene the interviewee has remembered.

Ask the interviewee to elaborate their responses (e.g., can you tell me more about that, what happened after that, what did you think when that happened)

9) Did the person engage in the behaviour because they were being ignored?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

10) Did the person engage in the behaviour when access to a preferred (desired) activity was denied or removed?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

11) Did anyone try to engage the person as a result of their behaviour?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

12) Did the behaviour occur when the person was asked to perform a task?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

13) Did the person engage in the behaviour when no-one was watching?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

14) Did the behaviour involve anyone else?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

15) Did the behaviour involve any objects?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

16) Did anything happen to the person as a result of the behaviour?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

17) Did anything cause the behaviour?

Scene 1	Scene 2	Scene 3	Scene 4	Scene 5
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

Confidence and end.

a) How confident are you that you have accurately remember what happened? _
1 (low) to 10 (high)

18) Close interview and answer any questions the participant has about the interview.

19) Debrief participants and ask them not to disclose the aims of the study to others who may be taking part.

Appendix B: Event Contextualisations

Asperger's syndrome

Paul has been diagnosed as having Asperger's syndrome. Because he has Asperger's syndrome, Paul sometimes gets "stuck" in certain patterns of behaviour which he repeats many times.

Paul has some repetitive language ability, but he can't communicate well with language and people must remember this when working and interacting with Paul. Sometimes this difficulty communicating makes Paul feel quite frustrated because he cant explain to people what he wants, or what he is thinking or feeling. Sometimes people can get quite frustrated with Paul because they can not explain the things he needs to do. These breakdowns in communication can be very distressing when they occur.

As well as language difficulties, Paul's Asperger's syndrome means that he doesn't interact well with others and that he never makes eye contact or gestures to initiate or maintain social interactions. This makes it seem like he isn't interested in people but this is very typical in Asperger's syndrome and is not something he does on purpose.

Because of Paul's communication difficulties he finds other ways to let people know what he wants, likes or doesn't like. In the video your about to watch try and see if you can spot some examples of the things I've just told you about Paul.

Trouble at school

Paul is a very difficult person and people just can not work him out. Sometimes he acts in very childish and silly ways and often he does things just as a way to annoy people and get them cross.

Paul doesn't like to speak or listen to people. This means that talking and working with Paul can be difficult because he does not listen and you can never explain to him what he needs to do. Because of this, communication often breaks down and most people avoid Paul if they can.

As well as not talking or listening to people, Paul is not a sociable person and he doesn't interact well with others. This is because he isn't interested in people and is quite a stubborn and difficult person, especially if he doesn't get his own way.

Because Paul doesn't talk or listen to people, things usually go wrong for Paul. His teachers have noticed that if there is some disturbance or trouble around you can be sure that Paul will have something to do with it.

In the video you're about to watch, try and see if you can spot some examples of the things I've just told you about Paul.

Appendix C: Ethical approval

University of Southampton

School of Psychology

University of Southampton
Highfield Southampton
SO17 1BJ United Kingdom

Tel +44 (0)23 8059 5000
Fax +44 (0)23 8059 4597

11 August 2005

Pat Gwyer
Department of Clinical Psychology
University of Southampton
Southampton
SO17 1BJ

Dear Pat,

Re: The enhancement of the clinically relevant information elicited from an individual who has observed an incident of challenging behaviour through the modification of a current Functional Analysis Interview

I am writing to confirm that the above titled ethics application was approved by the School of Psychology Ethics Committee on 9 August 2005.

Should you require any further information, please do not hesitate in contacting me on 023 8059 3995.

Please quote approval reference number CLIN/03/85.

Yours sincerely,

Kathryn Smith
Secretary to the Ethics Committee

Appendix D Participation Consent Forms

University of Southampton

School of Psychology
Doctoral Programme in Clinical Psychology

University of Southampton
Highfield
Southampton
SO17 1BJ United Kingdom

Tel +44 (0)23 8059 5321
Fax +44 (0)23 8059 2588
Email

The enhancement of the clinically relevant information elicited from an individual who has observed an incident of challenging behaviour through the modification of a current Functional Analysis Interview.

Consent form for research participants

Information sheet

I am Pat Gwyer, a Trainee Clinical Psychologist at the University of Southampton. I am requesting your participation in a study regarding people's recollections of an incident of challenging behaviour that they have observed. This will involve you watching a three minute video and being interviewed for approximately half an hour concerning what you remember about the video. You will be asked questions about what you thought and felt when you were watching the video. The study is not a memory test or intelligence test, and there are no right or wrong answers. We are simply looking at how people remember things they have seen.

Your interview will be taped so we can score and code your responses. However, personal information will not be released or viewed by anyone other than the researchers involved in this project. Results of this study will not include your name or any other identifying characteristics. All tapes will be destroyed after analysis and not used for any other purpose than for which informed consent has been granted.

Your participation is voluntary and you may withdraw your participation at any time. If you chose not to participate there will be no consequence to your grade or to your treatment as a student in the psychology department.

A debriefing statement will be supplied at the end of each interview. If you have any questions please ask them now, or contact Pat Gwyer at pgg203@soton.ac.uk.

Sincerely,

Pat Gwyer

Statement of Consent

I _____ (participant's name) have read the above informed consent form.

I understand that I may withdraw my consent and discontinue participation at any time without penalty or loss of benefit to myself. I understand that the data collected as part of this research project will be treated confidentially, and that published results of this research project will maintain my confidentiality. In signing this consent letter, I am not waiving my legal claims, rights or remedies. A copy of this consent letter will be offered to me.

(Circle Yes or No)

I give consent to participate in the above study	Yes / No
I give consent to be audio taped	Yes / No
I understand that these audiotapes will be destroyed after analysis	Yes / No

Signature: _____ Date: _____

Name: _____ (participant's name)

I understand that if I have questions about my rights as a participant in this research, or if I feel that I have been placed at risk, I can contact the Chair of the Ethics Committee, Department of Psychology, University of Southampton, Southampton, SO17 1BJ. Phone (023) 8059 3995.

Appendix E: Instructions to Interviewers

Interviewer instructions

1) Introduce yourself and thank the participant for agreeing to take part in the study and for attending the interview session.

2) Review consent from, explain purpose of interviews and that the video was an acted event.

3) Record your name and the interviewee's name on the interview protocol sheet, the tape and the tape box. Also note the tape side of each interview and use one side of the tape for each interview.

4) Insert the tape and check recording levels and that the tape recorder is functioning correctly. Check that the microphone is on; voice activation (VOR) is off; and speed is set to normal.

5) Note the interview start time, the date of the interview and the number of each interview on the protocol sheet.

6) Press the record button and begin the interview.

7) At the end of the interview debrief participants (provide debriefing statement)

8) Place the interview sheets in the A4 envelope provided.

9) Get equipment ready for the next interview.

Follow the interview protocol sheet for the interview you are conducting

Appendix F: Participant Debriefing Sheet

University of Southampton

School of Psychology
Doctoral Programme in Clinical Psychology
University of Southampton
Highfield
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SO17 1BJ United Kingdom
Tel +44 (0)23 8059 5321
Fax +44 (0)23 8059 2588
Email

The enhancement of the clinically relevant information elicited from an individual who has observed an incident of challenging behaviour through the modification of a current Functional Analysis Interview.

Debriefing statement

The aim of this research was to explore people's recollections of incidents of challenging behaviour as a function of prior knowledge (e.g., the story you hear before watching the video) and the way you are interviewed. It is expected that the story you hear before watching the video influenced what details you remember about the video, and that this was in some way modified by the interview technique used when asking you questions about the video.

Your data will help our understanding of how people's (particularly care staffs') beliefs about challenging behaviour influences what they remember about challenging behaviour. Also how Clinical Psychologists need to be aware of this when interviewing care staff about episodes of challenging behaviour which may have occurred.

On completion of the research, the study and it's findings will be presented to the Psychology Department in a visiting speaker format. At this time a full debrief of results and a question and answerer session will be provided by the researcher (Pat Gwyer)

In the mean time if you have any further questions please contact Pat Gwyer at pgq203@soton.ac.uk.

Thank you for your participation in this research.

Signature: _____ Date: _____

Name: _____

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the Chair of the Ethics Committee, Department of Psychology, University of Southampton, Southampton, SO17 1BJ. Phone (023) 8059 3995.

Appendix G: Request to Clinical Psychologists for Assistance in the Creation of Clinical Scoring.

Dear ..... ,

Thanks for agreeing to help out. Here are the instructions as in the original email. As I said the task shouldn't be too onerous or time consuming.

The stimuli material is enclosed on the disk and runs on any computer with media player. It comprises of a young boy at school who neatly arranges pencils on the desk and who doesn't interact with other students.

However should his pencils be disturbed or moved he gets a bit upset and runs from the room or something similar. In some of the clips he does not do anything challenging but there may be clues to his behaviour which a Clinical Psychologist might make note of (that's the stuff that I'd like you to highlight).

The enclosed transcript of the video clip contains most event details. There is also an electronic copy on disk should you wish to use that one.

The idea would be for you to watch the video clip and highlight on the script the type of things you'd be looking for as a practitioner or what parts you feel are clinically relevant. Anything that helps you understand the function of his behaviour. Alternatively you could just read the script and highlight the salient aspects that way.

All you need do is highlight the parts on the script that you think are clinically relevant to your understanding of the boy and what you would be looking to find out as a practitioner, and then post me back the marked script. You don't need to interpret or formulate the behaviour.

The stimuli is 6 minutes long but the first 2 minutes are scene setting and will not be shown to participants, so you don't need to worry about that part.

The idea would be to build up a composite consensus of what a number of practitioners think are the most important details to obtain from an interviewee about instances of challenging behaviour they may have observed.

The disc can be kept or disposed of to save return postage fees and you need not put any identifiable marks on your returned script if you wish to remain anonymous.

I hope this makes sense, but if not please feel free to email me and I can clarify anything that is a little unclear.

Please return the script in the enclosed self addressed envelope to me.

Many thanks,

Pat Gwyer
Trainee Clinical Psychologist
2003 Intake
University of Southampton

Appendix H: Overview of Stimuli Material

Stimuli material overview

In all five events the central character (Paul) demonstrates elements of behaviour which fulfilled the criteria for a diagnosis of Asperger Syndrome according to ICD-10 and WHO guidelines. In two of the events (i.e., the generic classroom lesson and the playground scene) Paul did not present with challenging behaviour. In the first of these scenes (generic classroom) Asperger Syndrome is portrayed through visual presentations of Paul working alone and quietly in the classroom, frequently ordering his pencils whilst his two class mates sit nearby discussing the forthcoming weekend's activities to which Paul does not engage or interact. In the second (playground) scene Paul plays alone in the playground with his pencil and ball while his classmates play nearby with each other.

In the remaining three scenes (computer lesson, science lesson, and maths lesson) Paul demonstrates challenging behaviour motivated either by escape or a combination of avoidance and escape.

Escape: In the science lesson scene, Paul is shown running from the room after the teacher removes his pencils from the desk in order for the class chemistry experiment to occur.

Avoidance and Escape: In the computer lesson scene, in order to avoid social interaction, Paul does not respond to the teacher's request to move from his computer and share with another boy after his computer crashes (avoidance). The teacher then moves Paul's pencils as part of this request at which point Paul runs from the room (escape).

Avoidance and Escape: In the final scene, Paul is informed that there has been a change to the timetable and that ICT (Information, Communication & Technology) has been cancelled and that drama will occur instead. Paul is requested by the teacher to pack his belongings up and make his way to the drama class, Paul ignores the request and repeats "*No drama, ICT*" (avoidance). Paul's teacher then begins to put Paul's belonging in his school bag, Paul remains motionless until his pencils are touched at which point he jumps up and runs from the room with his school bag hitting the teacher in the processes (escape).

Appendix I: Bias Checks and Suitability of Data for Analysis

I.1.0. Scoring and Coding of Interviews

Using eight randomly selected interviews (two from each condition), two reliability tests (code-recode reliability, and inter-rater reliability) were undertaken to ensure the accuracy of the scoring of interviews.

I.1.1 Code-recode Reliability

The eight interviews were scored and re-scored blind by the author after a four day delay. Percentage agreement between the two was high (over 90%) with this remaining so across condition. Any discrepancy between the two was used by the author as an opportunity to refine the scoring system. In cases of discrepancy, the author made a decision concerning scoring of information after consultation with the project supervisor. Once the author was satisfied with the reliability of the scoring, a second "blind scorer" scored and coded the same interviews.

I.1.2 Inter-rater Reliability

A second independent scorer who had experience working with individuals with learning difficulties as a Learning Support Assistant, scored and coded the same eight randomly selected interviews. Once all interviews had been scored, the author and the second scorers' coding sheets were compared to assess reliability, a high level of inter-rater reliability was obtained for correct free recall ($r(8) = 0.98$, $p<0.001$), incorrect free recall ($r(8) = 0.71$, $p = 0.48$), correct cued recall ($r(8) = 0.90$,

$p<0.01$), incorrect cued recall ($r(8) = 0.98$, $p<0.001$) (see Davis, McMahon & Greenwood, 2004).

I.2.0. Normality of Distribution and Homogeneity of Variance

Kolmogorov-Smirnov tests to assess normality of distribution and Levene tests of homogeneity of variance were conducted. In all but a few cases, data was normally distributed and of equal variance. In line with the suggestions of Howell (2002) and Field (2005) square root and logarithm transformation were conducted where appropriate. These procedures however did not normalise the data in all cases and as such, non-parametric analysis may be considered a more suitable approach to data analysis.

However, in light of the well documented evidence indicating that the assumptions of parametric tests are robust enough to be violated (Howell, 2002, Kerlinger, 1973) parametric data analysis was conducted on the original data and no transformations of the data took place. Additionally as Dancey & Reidy (1999) note, MANOVA is still a valid procedure even with modest violations of assumptions of multivariate normality if there is a reasonable number of participants in each group (12 or above). This decision not only allowed the more "powerful" parametric tests to be utilized, but also allowed comparisons to be made across conditions were the transformation of some variables, but not others would prove problematic (Field, 2005).

The assumptions of ANCOVA (i.e., covariates were not correlated with each other, there was a linear relationship between the dependent variable and the covariate and homogeneity of regression slopes) were also met.

I.3.0) The Effect of Interviewer, Practice and Fatigue

In light of the differences in experiences between interviewers, and in order to rule out the possibility of practice or fatigue effects confounding results, two two-way MANOVAs with interviewer (interviewer one, two and three) and interview order (i.e., the first seven interviews, the second seven interviews and the final interviews) as the independent variables were conducted on (1) interview measures (i.e., Interview length, number of questions asked and the amount of interviewer feedback / encouragement given) and (2) recall measures (correct and incorrect free recall, correct and incorrect cued recall).

It should be noted here that interviewers did not conduct an equal number of interviews and as such the number of interviews in the final seven category is a descriptive mean. That is interviewers One and Three conducted 20 interviews each while interviewer Two conducted 22 interviews, thus the category "Final seven" = the final six interviews for Interviewers One and Three and the final eight interviews for Interviewer Two.

I.3.1 Interview Measures

Analysis revealed a multivariate difference between Interviewer ($F(6,102) = 4.0$, $p = 0.001$, Wilk's $\lambda = 0.65$) for Interview measures. Follow-up univariate analysis indicated that the Interview length ($F(2,53) = 5.8$, $p = 0.005$) and the amount of feedback given to interviewees by interviewers ($F(2,53) = 4.1$, $p = 0.02$) was significantly influenced by interviewer. The number of questions asked did not significantly differ between interviewers ($F(2,53) = 2.3$). Means presented in Table I.1 below.

Table I.1. The Effect of Interviewer on Interview Measures

	Interviewer							
Interview measures	One (n = 20)		Two (n = 22)		Three (n = 20)			
	Mean	SD	Mean	SD	Mean	SD	F	df
Wilks' Lambda λ = 0.65							0.65	6,102
Interview *	29:48	2:24	31:12	4:02	27:06	3:15	<1	2,53
Questions	13.7	5.4	11.6	3.7	13.6	1.7	<1	2,53
Feedback	15.7	2.8	16.5	2.1	14.0	2.6	<1	2,53

*minutes: seconds

Pair wise comparison indicated that interviewer Three's interviews were significantly shorter than both interviewer One's (mean difference = -2.8, $p = 0.02$) and interviewer Two's (mean difference = 3.7, $p = 0.002$). With regards to feedback, pair wise comparison indicated that interviewer Three gave less feedback to interviewees than both interviewer one

(mean difference=-2.3, p=0.05) and interviewer two (mean difference =2.3, p= .007).

I.3.2 Recall Measure

With regards Recall Measures, the Interviewer multivariate ($F(8,100) = 1.4$, $p = 0.1$, Wilk's $\lambda = 0.81$) and univariate analysis for Interviewer proved non significant for correct free recall ($F<1$); incorrect free recall ($F<1$); correct cued recall ($F(2,53) = 2.9$); incorrect cued recall ($F(2,53) = 2.6$). Means are presented in Table I.3.2.

Table I.3.2. The Effect of Interviewer on Recall Measures

	Interviewer							
Recall measures	One (n = 20)		Two (n = 22)		Three (n = 20)		F	df
Wilk's Lambda $\lambda = 0.81$							0.81	8,100
Correct								
Free recall	54.7	15.0	59.6	13.6	57.2	17.6	<1	2,53
Cued recall	15.8	11.8	11.7	7.8	9.2	4.4	2.9	2,53
Incorrect								
Free recall	6.7	4.7	6.6	3.6	6.3	3.2	<1	2,53
Cued recall	3.8	2.8	2.3	2.2	2.3	1.9	2.6	2,53

I.4.0 Practice and Fatigue Effects

I.4.1 Interview measures

Multivariate ($F(6,102) = 1.0$, $p = 0.4$, Wilk's $\lambda = 0.89$) and follow-up univariate analysis indicated that Interview order did not influence the Interview lengths ($F<1$), the number of questions asked ($F(2,53) = 2.2$) nor the amount of feedback given ($F<1$) in each interview. Means are presented in Table I.4.1.

Table I.4.1. The Effect of Interview Order on Interview Measure

	First Seven		Middle Seven		Final seven			
	Mean	SD	Mean	SD	Mean	SD	F	df
Wilk's Lambda $\lambda = 0.89$							0.89	6,102
Length*	29.0	4.18	28.54	4.38	29.18	2.48	<1	2,53
Questions	13.8	3.3	13.6	5.1	11.4	3.0	2.2	2,53
Feedback	15.6	2.6	14.8	3.4	15.7	1.7	<1	2,53

*minutes: seconds

I.4.2 Recall measure

Analysis revealed a multivariate difference between Interview order for Recall measures. Further univariate analysis upon Interview order proved non significant for correct free recall ($F(2,53) = 1.3$); cued recall correct ($F(2,53) = 1.7$); incorrect cued recall ($F<1$). Results for incorrect free recall ($F(2,53) = 3.3$, $p = 0.03$) however proved significant. Means presented below in Table I.4.2.

Table I.4.2. The effect of Interview order on recall measures

	Interviewer							
Recall measures	First Seven		Middle Seven		Final seven			
	Mean	SD	Mean	SD	Mean	SD	F	df
Wilk's Lambda λ = 0.88							0.71*	6,102
Correct								
Free recall	56.9	15.1	53.4	18.4	61.5	10.8	1.3	2,53
Cued recall	12.1	8.2	14.6	11.0	9.7	6.2	1.7	2,53
Incorrect								
Free recall	4.8	2.7	7.2	4.2	7.4	3.8	3.3*	2,53
Cued recall	3.2	2.7	2.6	1.9	2.5	2.6	<1	2,53

* p = 0.03

Pair wise comparison indicated that significantly fewer errors were elicited during the first seven interviews compared to the second seven interviews (mean difference = -2.3, p = 0.04) and the final seven interviews (mean difference = -2.6, p = 0.3) which did not differ between themselves (Means: First seven interviews = 4.8, SD = 2.7; Second seven interviews = 7.2, SD = 4.3; Third seven interviews = 7.4, SD = 3.8). To further explore the possible influence of Interview order upon our data, Spearman rank order correlations were calculated for all recall and interview measures with interview number by Interview Order. All analysis proved non significant, thus indicating that neither recall nor interview measures increased as the interviews progressed (as would be expected

if a practice effect had occurred) nor decreased towards the end of the investigation (as would be expected had interviewer fatigue set in). Results are presented in Table I.4.3.

Table I.4.3. Correlation Coefficients between Interview Number and Interview Measures and Recall Measures by Interview Order.

	First Seven	Middle Seven	Final Seven
Interview measure			
Interview length	$r_s(21) = 0.31$	$r_s(21) = -0.05$	$r_s(20) = 0.01$
No Q's asked	$r_s(21) = 0.27$	$r_s(21) = -0.18$	$r_s(20) = -0.21$
Feedback given	$r_s(21) = -0.11$	$r_s(21) = 0.19$	$r_s(20) = -0.19$
Recall Measures			
Correct			
Free recall	$r_s(21) = -0.20$	$r_s(21) = 0.26$	$r_s(20) = -0.05$
Cued recall	$r_s(21) = 0.35$	$r_s(21) = -0.29$	$r_s(20) = -0.03$
Incorrect			
Free recall	$r_s(21) = 0.17$	$r_s(21) = 0.37$	$r_s(20) = 0.28$
Cued recall	$r_s(21) = 0.35$	$r_s(21) = 0.12$	$r_s(20) = -0.39$

The Interaction between Interviewer and Interview Order: Interview and Recall Measures

Multivariate analysis of interview measures indicated that the interaction interview order * interviewer ($F(12, 135) = 0.8$, $p = 0.64$, Wilk's $\lambda = -.83$) did not significantly influence any interview measures, with this being supported by follow-up univariate analysis for Interview length ($F(4,53) = 1.8$), the number of questions asked ($F(4,53) = 0.9$) and the amount of feedback given ($F(2,53) = 0.5$).

With regards recall measures, the multivariate interaction Interview order * Interviewer ($F(16,153) = 1.5$, $p = 0.09$, Wilk's $\lambda = 0.63$) again proved non significant for correct free recall ($F(4,53) = 0.3$); incorrect free recall ($F(4,53) = 2.2$, $p = 0.09$); correct cued recall ($F(4,53) = 1.5$); incorrect cued recall ($F(4,53) = 1.3$).

I.5. Table of results from 2 (Contextualisation) * 2 (Interview) ANOVA to explore matching of delay across both experimental conditions.

Table I.5.1. Table of Results for 2 (Contextualisation) * 2 (Interview) Upon Delay as Main Effects.

	Mean	SD	(F(1,58)
MNSCI	2.5	1.1	<1
NSCI	2.6	0.9	<1
Neutral	2.5	1.0	<1
Negative	2.6	1.0	<1

Table I.5.2. Table of Results for 2 (Contextualisation) * 2 (Interview) Upon Delay as an Interaction.

	MNSCI		NSCI		F(1,58)
	Mean	SD	Mean	SD	<1
Neutral	2.3	1.1	2.7	0.9	<1
Negative	2.6	1.1	2.6	1.0	<1

Table J. Table of Means and Standard deviations for the Contextualisation * Interview Interaction for Correct Free, Correct Cued, Incorrect Free and Incorrect Cued recall.

Recall	MNSCI				NSCI			
	Neutral		Negative		Neutral		Negative	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Correct Free	65.8	13.3	64.5	14.4	50.1	12.9	51.6	14.9
Incorrect Free	6.0	3.2	7.1	3.5	7.2	4.8	5.9	3.4
Correct Cued	9.7	6.7	10.7	8.0	13.5	8.4	14.2	11.3
Incorrect Cued	2.6	2.7	2.1	1.6	3.9	2.4	2.3	2.4

Appendix K. The Effects of Repeated Retrieval

K.1 The effectiveness of the MNSCI to a "Typical" Clinical Interview

In order to compare the effectiveness of the MNSCI with a more "typical" clinical interview (i.e., one based upon one free recall narrative of the event with follow-up questions) further analysis compared the difference in correct and incorrect recall between the MNSCI as applied in this study (i.e., three free recall attempts and follow-up questions) with a version of the NSCI which may be more likely to occur within real clinical settings (i.e., one free recall attempt with follow-up questions). This will be termed a "typical" clinical interview. In this analysis while all three free recall attempts and follow-up questions were included in the MNSCI condition, only the first recall attempt and recall from the follow-up questions were used in the "Typical" condition (i.e., using recall elicited from only the first free recall and follow-up questioning of the NSCI).

A 2 (Contextualisation) * 2 (Interview) MANOVA was conducted upon correct and incorrect recall. Analysis proved non significant for Contextualisation ($F<1$, Wilks' $\lambda = 0.98$), and the two-way interaction, Interview * Contextualisation ($F(2,57) = 1.2$, $p = 0.2$, Wilk's $\lambda = 0.96$). Results for the main effect of Interview proved significant ($F(2,57) = 40.9$, Wilks' $\lambda = 0.41$).

Further follow up Univariate statistics (ANOVA) indicated a significant main effect of Interview for correct ($F(1,58) = 81.9$, $p = 0.001$; MNSCI M = 75.4, SD = 12.6; "Typical" interview M = 47.6, SD = 11.4) and incorrect recall ($F(1,58) = 4.6$, $p = 0.03$; MNSCI M = 8.9, SD = 4.1; "Typical" interview M = 6.9, SD = 5.6).

Analysis upon both correct and incorrect recall proved non significant (both F's<1) for Contextualisation (Correct Neutral M =58.1, SD = 18.9, Correct Negative M = 62.3, SD = 17.7; Incorrect Neutral M = 8.0, SD = 3.9, Incorrect Negative M = 7.6, SD = 4.0). Results for the interaction Interview * Contextualisation proved non significant for correct recall ($F1,58) = 1.2$, $p = 0.3$ and incorrect recall (F<1). Means and standard deviations presented in Table K.1.

Table K.1. Mean Recall Scores for the Interaction between Contextualisation and Interview (MNSCI and "Typical").

Retrieval	MNSCI		TCI	
	Mean	SD	Mean	SD
Neutral				
Correct recall	75.6	9.9	44.6	11.5
Incorrect recall	8.6	4.3	7.5	3.6
Negative				
Correct recall	75.2	15.2	51.0	10.6
Incorrect recall	9.3	4.0	6.1	3.5

TCI = "typical" clinical interview (i.e., NSCI with one free recall attempt and follow-up questions)

Appendix K.2 The Effects of Repeated Retrieval Upon Correct and Incorrect Recall.

Analysis next aimed to explore if the mnemonics of the MNSCI had a greater effect at eliciting recall than simply asking the interviewee to again recall the event, or a protective factor with regards errors reported (i.e., aim three of the research). In order to achieve this an initial 2 (Interview) * (Contextualisation) MANOVA on correct and incorrect recall elicited at the first retrieval attempt (e.g., Context Reinstatement vs. initial motivated retrieval) was conducted. Then two separate MANCOVA analyses (using previously elicited recall as the covariate) were conducted upon recall elicited at the second (Change Perspective) and third (Change Order) retrieval attempts.

K.2.1 First Recall Attempt: Context Reinstate vs. First Motivated Retrieval Attempt

Multivariate analysis proved significant for Interview ($F(2,57) = 4.1$, $p = 0.02$, Wilk's $\lambda = 0.87$) but non significant for Contextualisation ($F<1$, Wilk's $\lambda = 0.99$) and the interaction Contextualisation * Interview ($F(2,57) = 1.5$, $p = 0.2$, Wilk's $\lambda = 0.95$).

Further univariate analysis indicated a significant main effect of Interview for correct recall ($F(1,58) = 5.7$, $p = 0.02$; Context Reinstate $M = 42.2$, $SD = 14.2$; Motivated Retrieval Attempt $M = 33.8$, $SD = 13.0$) but proved

non significant for incorrect recall (F<1, Context Reinstate M = 3.3, SD = 2.4; Motivated Retrieval Attempt M = 3.7, SD = 52.7). The main effect of Contextualisation proved non significant for both correct recall (F<1, Neutral M = 37.1, SD = 14.7; Negative M = 38.1 SD = 13.7) and incorrect recall (F<1, Neutral M = 3.4. SD = 2.7; Negative M = 3.7 SD = 2.5).

With regards the interaction Interview * Contextualisation, results proved non significant for correct recall ($F(1,58) = 2.6$, $p = 0.1$) and incorrect recall (F<1). Means presented in Table K.2.1.

Table K.2.1. Mean Correct and Incorrect Recall for the Interaction Contextualisation by Interview

Retrieval	Context Reinstate		First Motivated Retrieval	
	Mean	SD	Mean	SD
Neutral				
Correct recall	44.8	15.7	31.0	10.7
Incorrect recall	3.2	2.6	3.5	2.7
Negative				
Correct recall	39.5	12.5	36.8	15.0
Incorrect recall	3.5	2.3	3.8	2.8

With regards the second and third recall attempts, two separate 2 (Interview) * 2 (Contextualisation) MANCOVA's (2^{nd} recall attempt vs.

Change Perspective and 3rd recall attempt vs. Change Order, with previous recall as the covariate) were conducted. Previous recall (i.e., that obtained from the preceding interview phase) was found to be significantly related to Interview for both the second ($r(62) = 0.38$, $p = 0.002$) and third ($r(62) = .33$, $p = 0.008$) retrievals.

K.2.2 Second Recall Attempt: Change Perspective vs. Second Motivated Retrieval Attempt

A 2 (Interview) * 2 (Contextualisation) MANCOVA upon recall measures (correct and incorrect) with previous recall (i.e., that obtained from the first recall attempt) as the covariate was conducted. Results proved non significant for Interview ($F(2,56) = 1.4$, Wilks' $\lambda = 0.95$), Contextualisation ($F<1$, Wilks' $\lambda = 0.99$), and the Interview * Contextualisation interaction ($F<1$, Wilks' $\lambda = 0.99$). The covariate previous recall proved significant ($F(2,56) = 3.6$, $p = 0.03$, Wilks' $\lambda = 0.89$).

Further exploratory univariate analysis (ANCOVA) proved non significant for correct recall as a main effect for Interview ($F(1,57) = 2.4$, $p = 0.12$; Adjusted MNSCI = 12.9, SE = 1.6; Adjusted NSCI M = 9.4, SE = 1.5), Contextualisation ($F(1,57) = 1.2$, $p = 0.27$; Adjusted Positive M = 12.3, SE = 1.5, Adjusted Negative M = 9.9, SE = 1.5), and the interaction Interview * Contextualisation ($F<1$; Adjusted Means presented in Table K.2.2).

Results for incorrect recall proved non significant for Interview ($F<1$; MNSCI Adjusted M = 2.3, SE = 0.41; NSCI Adjusted M = 1.8, SE = 0.37), Contextualisation ($F<1$; Neutral Adjusted M = 2.2, SD = 0.38; Negative Adjusted M = 1.8, SD = 0.39) and the Contextualisation * Interview interaction ($F<1$; Adjusted Means and standard error presented in Table K.2.2).

Table K.2.2. Adjusted Means for Correct and Incorrect Recall at the Second Attempt with Previous Recall and Delay as Covariates.

Retrieval	Positive		Negative	
	Adjusted Mean	SE	Adjusted Mean	SE
Correct				
Change Perspective				
	14.2	2.3	11.6	2.3
Second attempt				
	10.5	2.0	8.3	2.1
Incorrect				
Change Perspective				
	2.2	0.6	2.3	0.6
Second attempt				
	2.2	0.5	1.4	0.5

K.2.3 Third Recall Attempt: Reverse Order vs. Third Motivated Retrieval Attempt

A second 2 (Interview) * 2 (Contextualisation) MANCOVA with previous recall (i.e., that obtained form the initial free recall and the second recall attempt) as the covariate was conducted on the amount of correct and incorrect recall elicited at the third retrieval attempt. The main effect of Interview proved significant ($F(2,56) = 4.0$, $p = 0.02$, Wilks' $\lambda = 0.87$). Results for Contextualisation ($F<1$), the covariate previous recall ($F(2,56) = 2.2$, $p = 0.1$, Wilks' $\lambda = 0.93$) and the interaction Interview * Contextualisation ($F(2,56) = 2.9$, $p = 0.065$, Wilks' $\lambda = 0.91$) proved non significant.

Further exploratory univariate analysis (ANCOVA) proved significant only for correct recall with Interview as a main effect ($F(1,57) = 7.1$, $p = 0.01$), with results showing that the Change Order mnemonic (Adjusted M = 11.5, SE = 1.4) was responsible for significantly more correct recall than the request to recall again (Adjusted M = 6.4, SE = 1.2). The effects of Contextualisation ($F(1,57) = 1.4$, $p = 0.24$; Neutral Adjusted M = 7.9, SE = 1.3; Negative Adjusted M = 10.0, SE = 1.3) and the Interview * Contextualisation interaction ($F(1,57) = 2.5$, $p = 0.12$, See Table K.4 for adjusted means) proved non significant.

Results for incorrect recall proved non significant for Interview ($F<1$; MNSCI Adjusted M = 0.9, SE = 0.3; Adjusted NSCI M = 1.0, SE = 0.2),

Contextualisation ($F<1$; Neutral Adjusted M = 0.9, SE = 0.2; Negative Adjusted M = 1.0, SE = 0.2) and the interaction Interview * Contextualisation ($F(1,57) = 4.8$, $p = 0.33$; Adjusted means are presented in Table K.2.3).

Table K.2.3. Means for Incorrect and Incorrect Cued Recall at the Third Attempt with Previous Recalls as Covariates.

Retrieval	Positive		Negative	
	Adjusted Mean	SE	Adjusted Mean	SE
Correct				
Change Order				
	8.9	1.9	14.0	1.9
Third attempt				
	6.7	1.7	6.0	1.8
Incorrect				
Change Order				
	0.5	0.4	1.3	0.4
Third attempt				
	1.4	0.3	0.7	0.3