

Portfolio

Volume 1 of 2

RACHEL SARAH AKANDE

A portfolio submitted in partial fulfilment of the requirements of the University of Hertfordshire for the degree of Degree of Doctor of Clinical Psychology including a Thesis entitled:

Autobiographical memory and depression: an investigation of over general memory processing on recall tasks

The programme of study was carried out in the Department of Psychology,
University of Hertfordshire
November 2004

CONTENTS

	Page
ESSAY 1 Dementia	3 - 21
ESSAY 2 Challenging behaviour	22 - 38
SMALL SCALE SERVICE RELATED RESEARCH	39 - 60
LITERATURE REVIEW	61 - 79
THESIS	80 - 208
CRITICAL REVIEW	209 - 222

People with dementia are PEOPLE with dementia and not people with DEMENTIA. Critically discuss how the emphasis in such a statement could influence working with this group of people psychologically.

RACHEL AKANDE

OCTOBER 2002

YEAR 1

WORD COUNT: 5023

INTRODUCTION

The exercise offers two views of people with dementia. Either the person or the diagnosis is significant. The emphasis produces opposing standpoints and may be likened to the difficulties of clinical formulation and research. That is, deciding whether to fit the individual to the psychological theory, or the theory to the individual. Such a debate may arise in many fields of Clinical Psychology, where the clinician is torn between being a scientist or a practitioner. It is difficult to wear both caps simultaneously: does one stick rigorously to the research methodology, or abandon it because an alternative intervention would be more effective in treating the individual? Alternatively, the emphasis may reflect the difference between medical and psychological therapy models. Within medical models, the diagnosis ultimately defines the treatment. Within psychological models, the individual's perception or experience influences the intervention. Neither view precludes the other, nor do they make the other necessary. The essay starts with a broadly accepted definition of dementia. It is beyond the scope of this essay to examine whether dementia is on a continuum with normal ageing or a distinct disease. Although such a debate may influence medication or prevention work, it is unlikely to change the type of psychological work that is available.

It will be suggested that the medical model is synonymous with "the person with DEMENTIA". The benefits of such a standpoint, in terms of research and service provision, will be discussed. Followed by the disadvantages, not least, that it does not leave much scope for working psychologically. Hence, the bulk and remainder of the essay will focus on working with the PERSON with dementia. As well as working with the individual, this emphasis offers more opportunities for psychological interventions. It considers the social construction of the syndrome, that is, that others who have contact with the person with dementia may also be affected and involved in psychological work.

Definition of dementia

Dementia is the progressive decline in cognitive and behavioural functioning, without the clouding of consciousness (The World Health

Organisation (WHO), 1986). For a diagnosis of dementia to be made the deterioration should be over a period of at least 6 months and other, physical causes should be excluded. In addition, there must be a memory impairment, together with at least one of the following phenomena:-

- decline in reasoning, inference and abstract thought or judgement
- decline in higher cortical functioning
- a change in personality or behaviour

Roth, Huppert, Tym & Mountjoy (1998)

So dementia is a set of symptoms marked by behavioural, cognitive and personality changes (Gilleard 1984, Jorm 1987, Stuart-Hamilton 2000; in Parker 2001). From the above operational definition alone, possible individual differences in presentation may occur. Memory clinics may assess people who have been referred for different reasons and through different routes. For example, a person may self refer because of increasing difficulty managing a workload, growing agitation with work colleagues and concern about his/her ability to cope; compared with an older person, long retired, who has been putting "memory lapses" down to old age, but whose spouse is concerned that s/he is no longer able to self care.

Further, there are many types of dementia. Some are known as secondary, because of their association with illnesses, such as hypothyroidism or Parkinson's disease. Others may be classified according to other characteristics, for example, Alzheimer's disease is marked by a gradual, insidious deterioration and Vascular dementia is more often observed to be of sudden, step-like progression (Roth et al, 1998). The blanket term "dementia" does not lend itself to the notion of working with the PERSON as it does not acknowledge that, within this diagnosis there are several causes and distinct presentations.

Maintenance and challenges to the medical model

Dementia is defined as incurable (WHO, 1986; in Keady & Nolan, 1995a). But the medical profession has developed from a diagnose-treat-cure framework, where practitioners act upon the (largely passive) patient (Parker, 2001). So for this

group of people, the prognosis is poor and the clinician may feel powerless and unable to offer any treatment. Further, the diagnosis is by exclusion of all other sources of confused behaviour (Cheston & Bender, 1999). It follows that, a diagnosis of dementia is offered as an explanation for change as a final resort: there are then no positive outcomes for the clinician or rehabilitative possibilities for the patient. This perspective has resulted in a bias towards seeing this group of people as homogeneous, or at least grouping all people with dementia, whatever the type, together. This is synonymous with the phrase "people with DEMENTIA".

Such a perspective is amplified as dementia is more likely to affect older adults (Chapman, Jacques & Marshall, 1994). This introduces a cultural bias in favour of the medical definition. Within Western culture, knowledge and experience are less important than productivity and therefore older adults are not seen as a valuable resource. Rather *the elderly* are seen as needy and inactive and should be "protected from risk and responsibility" (p30, Keller & Bromley, 1989). This may explain Downs and Rae's finding that two thirds of general practitioners in Scotland do not disclose their diagnosis to the person with dementia (1997; in Pratt & Wilkinson, 2001). Clinicians may then argue that the diagnosis of a terminal, untreatable illness can only cause or increase distress.

However, research is challenging the belief. For example, Keady and Nolan 1995b found that people with dementia often asked for validation of their coping strategies. The researchers understood this in terms of a need to discuss subjective experiences. Further, Pratt and Wilkinson (2001) found that people who had received a diagnosis were able to understand changes they had noticed and could use remaining cognitive abilities, to adapt to their decline and plan for the future by, for example, arranging power of attorney or a will. So, people with dementia are not helpless, nor are they unconcerned with their condition.

A stereotypical view of DEMENTIA, which includes the belief that it is a syndrome that only affects older adults, can lead to mis-diagnosis and misuse of resources. Barry (2001) presents a case and describes how symptoms and expectations (mistakenly) lead to the treatment of post traumatic stress disorder. Whilst late onset Alzheimer's disease is defined as a global deterioration in cognitive abilities, early onset dementia may first be noticed as changes in frontal lobe functioning

(such as declining executive control, planning or problem solving abilities) (Reich 1997; in Barry 2001). This illustrates how, by focusing on the symptoms and because of the assumption that dementia is a problem for the elderly, screening for dementia in younger adult with cognitive difficulties was delayed.

Barry (2001) concludes with the hope that dementia will be considered as an explanation when other, usually effective, interventions (psychological or otherwise) have failed. Generic clinical psychology training with diverse client groups facilitates experience with many different problems. It is likely to include work with people with dementia. Although clinical psychologists may not choose to specialise in this field, they may have sufficient experience to consider dementia as an explanation for observed symptoms. Further, Clinical Psychology is concerned with alleviating psychological distress, which places emphasis on subjective experience. That is, the PERSON is central to the work of clinical psychologists. In principle this may increase the speed of diagnosis, bringing people with dementia in contact with services at an earlier point in the illness.

Psychological work with people with DEMENTIA

There are 2 reasons why seeing people with DEMENTIA may be beneficial. Firstly, for research purposes. Dementia was introduced as a psychiatric category by Kraeplin in 1910, following the work of Alois Alzheimer with his patient Frau D (Parker, 2001). It was believed that deterioration in brain structure caused the disease, which in turn cause the changes in behaviour. However, findings from autopsies do not support this clear, linear relationship (Bender & Wainwright, 1998): people with profound difficulties may have relatively little brain damage. Neuropsychological research can provide useful observations and widen understanding of dementia. For example, the Cambridge Examination for Mental Disorders of the Elderly (CAMDEX) (Roth et al, 1998) offers classification into 4 categories. According to the severity of impairment, the disease may be classified as minimal, mild (early), moderate or severe. Researchers can then compare between groups and understand how the syndrome may progress, for example, detecting differences in ability between early and later stages of dementia. However, stage theories must be interpreted carefully. There are individual differences in terms of past and present experiences. For example, well rehearsed abilities are often the last to deteriorate, so a professional gardener in

the moderate stages of dementia may retain the ability to attend to a rose garden, whereas a businessman in the early stages of dementia, who has never shown any interest in horticulture may have difficulty learning to identify weeds.

Secondly, there may be economic reasons for seeing people with DEMENTIA. The health system was developed to meet the needs of the population, but is constrained by budgetary allowances. One of the factors influencing the provision of services is, therefore, the prevalence of the problem. This may be observed throughout the NHS, for example, there are fewer eating disorder clinics than family planning clinics. There must be sufficient need in the population before specialist dementia services are developed, and for the individual to have access to such a service, s/he must have a diagnosis (or at least the suspected diagnosis of) dementia.

The scarcity of resources may also lead to the belief that it is cost effective to offer group therapy. An example of group therapy is "classroom reality orientation". This is the repeated teaching of current circumstances to a group of people with dementia. The aim is to reduce confusion by improving orientation. It is based on the assumption that cognitive "exercise" can improve both cognitive test scores and practical abilities (Bird, 2000). However, research in this area is confusing, some demonstrating cognitive or behavioural improvements and some showing no change (Spector, Orrell, Davies & Woods, 1999a). Spector et al (1999a) carried out a meta-analysis of randomised control trials of reality orientation (RO). They found 6 studies which gave them 125 subjects (67 in the experimental group and 58 controls). Only the largest study (Breuil, 1994) found a significant positive effect on cognition. The other studies found trends in favour of RO, but the differences were not significant. Similarly, there were trends in favour of RO improving behaviour, but no significant differences. Further, long-term benefits were not clear-cut. One study found cognitive and behavioural scores had improved after 1 month (Wallis, Baldwin & Higginbotham, 1983); and another that, 10 weeks after treatment, the RO group had deteriorated to a level below their pre-treatment ability (Gerber et al, 1991).

Spector et al (1999a) suggest that their analysis showed that the more time spent in RO, the higher the cognitive effect. However, demand characteristics may have influenced the expectations placed upon the RO group, which in turn may have

affected performance. They conclude that it is not possible to infer which aspects of the therapy (that is, the who, when, where and how) have a causal effect.

In view of this, what Perrin (1996) has described as the indiscriminate provision of group therapy that does not consider individual's needs is not such an economic option as it appears at surface level. Further, group work does not automatically have a positive effect on quality of life for the person with dementia. It may have negative consequences if, for example, the person has difficulty communicating with others, feels uncomfortable in group settings, or feels continually challenged by RO information. Again, the importance of neuropsychological work that broadens understanding of brain-behaviour links is needed. RO was developed because of the belief that improved cognitive scores or objective behavioural measures reflect subjective improvements or gains in everyday functioning. This has yet to be demonstrated (Downes, 1987; Godfrey & Knight 1987; Göttestam 1987; Hanley & Lusty 1984; in Bird M, 2000).

So there are limitations to the type of psychological work that can be performed if the emphasis is on people with DEMENTIA. Keller and Bromley (1989) point out that

“to presume that our concepts are synonymous with reality is like confusing a map of a region with the region. A diagnosis cannot be the reality, but represents the therapists' projected view of reality” (page 36).

Within clinical psychology practice, subjective experience and resultant psychological distress are important. Here, the emphasis is on PEOPLE with dementia.

Psychological work with PEOPLE with dementia

The therapeutic qualities identified by Egan (1998) may facilitate a greater understanding of the experience of having dementia. For example, a non-judgemental attitude may enable the person with dementia to freely discuss his/her experiences and the use of empathy helps the therapist to understand what is expressed. The need for a therapeutic relationship was observed by Keady and Nolan (1995b) during interviews with people with dementia; they were

often made aware of the interviewees need to talk about "inner fears and feelings" (page 379).

Other relationships are also important. Many authors quote the work of Kitwood (1994) (for example, Stokes 2001; Parker 2001) who used the term "personhood". The individual develops and maintains a sense of self through relationships with others and roles within society. Subjective experiences are central to a feeling of worth. It is well recognised that psychological problems can arise from a loss of roles (Bender & Wainwright, 1998). With culture devaluing the older adult and cognitive decline making interactions more difficult, a reduction in societal roles is almost inevitable. Therefore, maintaining residual abilities for as long as possible is vital. For these reasons validating and valuing the person's relationships may be pivotal in promoting well-being or enhancing the person with dementia's quality of life.

Levels of disability

The late 1990's saw a growing interest in the individual's experience of dementia. Wing's 3 level model for psychiatric disability (1978; in Charlesworth 1996) is useful for examining the role of psychology in working with people with dementia. This distinguishes between primary, secondary and tertiary impairments, although it is acknowledged that these are not distinct categories and there may be some overlap.

Primary impairments

Primary impairments are the symptoms that lead to a diagnosis of dementia, such as the memory problems or behavioural and personality changes. Burgess, Wearden, Cox and Rae (1992) demonstrated operant conditioning in people in the mild to moderate and severe stages of dementia. In response to an auditory stimulus, participants in the research learnt to pull a lever. Although not ecologically valid in itself, such research has resulted in attempts to deal with problems encountered in everyday life through the adaptation of the environment. Other research has used cued association, for example, the clear labelling of toilets can reduce incidents of incontinence (Weisman et al 1994; in Bird, 2000). However, changes must be tailored according to circumstances and the required outcomes of the treatment. Bird (2000) suggests a case-specific method, based

on hypotheses and adapted according to the outcome of trials is likely to be most successful. For example, if a person is incontinent, several things may be tried. These may include placing signposts indicating the direction of the toilet; walking with them and ensuring they pass the toilet at hourly intervals; or, taking them to the toilet at regular intervals. Dementia is not the total inability to perform. It is possible to build on residual function.

Given that there may be several different presentations that lead to a diagnosis of dementia, neuropsychological assessment may be particularly useful in measuring primary impairments. By its very nature, this is an individual process, concerned with measuring a person's abilities. This work is likely to be varied according to the client but may, for example, assess the extent of cognitive decline and identify cognitive strengths. Work may then involve suggesting ways to optimise remaining memory functioning (such as rehearsal or repetition) or the teaching of compensatory strategies (such as the use of diaries).

Secondary impairment

Cupach and Metts (1994; in Bender & Wainwright, 1998) describe the individual with dementia as actively attempting to cope with relationship and goal-oriented problems. Secondary impairments are, therefore, the individual's reactions to the primary impairments. They include functional responses such as anxiety, grief, fear and depression and behavioural coping strategies such as denial and attachment behaviours.

Work by Gaebler and Hemsley (1991) examined the affective responses to taped music of 6 people who resided on an inpatient unit and required maximum supervision. All participants had severe dementia and limited verbal ability. The small-scale of this research limits generalisation to all people with dementia. Further, the results showed that, whilst some individuals benefited (had more positive affect following the therapy), others did not. This emphasises that different individuals have different needs, and for some, music therapy may help to reduce the negative affect that is often observed in people with dementia.

A humanistic approach can help the person with dementia explore the consequences of diagnosis and the disabilities that dementia entails. Keady & Nolan (1995b) point out that covering up problems can cause stress; whilst the

individual tries to continue as normal, s/he will be getting conflicting feedback, for example, believing that memory is normal but continually misplacing objects. This gradual build up of conflicting information, if not addressed could result in the individual catastrophising and, for example, feeling that there is no possibility of managing independently. So in the safety of therapy, this exploration can be instrumental in the individual accepting and being realistic about their abilities. They can then adapt their behaviour, drawing on appropriate coping strategies, such as being more organised or using diaries and planners.

Kitwood (1997; in Pratt & Wilkinson, 2001) suggests that a persons coping style will relate to coping styles that s/he has used throughout life. As with primary impairments, assessment tools may be available to support therapy working with difficulties at the secondary level. For example, Keady and Nolan (1995a) developed an Index for Managing Memory Loss (IMMEL). Because of reduced communicative abilities (and perhaps denial), this, clinician-administered measure can help to identify the nature of coping strategies used by a person with dementia. These can then be built upon, in the same ways as residual abilities are adapted to compensate for primary impairments.

Tertiary impairment

These are the social consequences of primary impairments, for example because of difficulty communicating or forgetting social engagements and appointments. Kitwood described a "malignant social policy" (1997; in Pratt & Wilkinson, 2001). This is where *the person* is overlooked. The provision of the label "dementia" comes with connotations of uselessness and powerlessness. All current and previous knowledge, ability and experience are ignored. Instead, the person is treated as an unfeeling infant or object. Thus the person is stigmatised and kept away from others, to prevent those others suffering the discomfort of interacting with someone different. Systemic work can reduce under-stimulation and the excess of disability that arises from malignant social policy.

Charlesworth (1996) discusses the "special" case of early onset dementia. It is often inappropriate for dementia services specially designed for older adults to provide services for younger people with dementia; their circumstances may be considerably different. For example, younger adults may have more dependants and may still be in employment at the time of diagnosis. Further, this group of

people are from a different generation (which has implications for reminiscence therapy, below), may be more active (requiring more physical stimulation) and be within a social network that defines purposeful activity as being in employment. Again, the generic experiences of clinical psychology training may be fundamental, drawing from research in other areas. For example, work within the learning disabilities field, such as supported living in community houses, can contribute to working with people with young onset dementia (Ogilvie, 1995; in Charlesworth, 1996). The author provides a case illustrating how supported employment had beneficial effects on both self-esteem and activities of daily living. As a result the individual was able to remain in the community, rather than moving to residential accommodation.

As suggested, a three level model of disability may be useful for examining the role of psychology, however, the levels are not mutually exclusive. For example, reminiscence therapy stems from a psychoanalytic approach known as life review (Butler 1963; in Spector et al 1999b). It was developed to enable the person with dementia to put their experiences into perspective (a secondary level need) and because remote memory is the last to deteriorate (that is, from knowledge of primary impairments). Further it is a means of engaging the person with dementia either with peers or carers (a tertiary level need) (Ebersole 1978; in Spector et al 1999b). Meta-analysis of the success of trials involving reminiscence therapy by Spector et al 1999b) produced confusing results. The review found positive trends, suggesting that reminiscence improved cognitive status, but no observed change on behavioural assessment measures. These may be interpreted at the primary level of disability. At the tertiary level, there were observations of changes in staff's attitudes towards people with dementia. For example, staff were more interested in their clients (Gibson 1993; in Spector et al, 1999b).

Psychological models and theories

Many psychological models may be drawn upon when working with PEOPLE with dementia. For example, a psychodynamic approach, drawing on attachment theory to explain some observed behaviours; a cognitive approach understanding how changes in the structure of the brain influence thinking ability; a humanistic approach striving to understand the experience of having dementia; or, as behavioural influence is two way with the person with dementia influencing carers

and vice versa, treatment of the individual in isolation may be insufficient and systemic work with family, friends and professional carers, looking at the individual *within* a larger context.

Psychodynamic

Attachment theory offers an explanation for some of the behaviours observed in people with dementia (Bowlby 1907 – 1990; in Butterworth & Harris, 1994).

Animals require a safe environment in which to explore and learn. Attachment is an innate process, where a bond develops between infants and their caregivers.

This bond, a form of trust, provides the infant with the security to explore the environment, "trusting" that the caregiver will protect it from harm. Attachment behaviours include returning to the attachment figure when feeling under threat and searching for the caregiver, if s/he is out of sight.

Dementia may be subjectively experienced as a threatening time, cognitive decline is marked by reduced capacity to understand the surrounding environment.

Attachment behaviours in children (crying, clinging etc.) are not frowned upon or punished. The caregiver is likely to attempt to comfort the crying child. Such understanding of attachment behaviours in an adult is less likely. Rather behaviour is likely to be labelled "challenging" and the carer may feel exacerbated and seek some form of intervention to reduce its occurrence. The training of carers, which helps them in understanding these behaviours in terms of attachment can enable the carers to be more sympathetic and comforting. Meade (1998) developed such a training course for staff in a residential setting. The result was improved quality and quantity of interactions with residents.

Stokes (2001) extends this theory, suggesting that attachment behaviours are extended to anyone who provides a feeling of security. For example, a person with dementia may be observed to "trail" his/her spouse, moving from room to room as the spouse carries out the housework. Caregivers may see the behaviour as aberrant and a deliberate attempt to "annoy". Work may include psychoeducation regarding the nature and course of the illness, facilitating greater understanding of these "challenging" behaviours (Marriott, 2001).

Systemic: families

Family Therapy can also help as functional behaviour changes in the person with dementia and the individual becomes increasingly unable to cope with activities in which s/he was once independent. For example, a person with dementia may become unable to handle financial matters or to remember simple routines. As a result relationships with spouses and children are likely to change. "Dementia is a family affair" (Adams, 1991; in Keady & Nolan 1995b). The equal partnership with a spouse may be lost and the child-parent relationship may be reversed. Spouses and offspring may become more responsible for the person with dementia, for example, gaining power of attorney or helping the person with activities of daily living. The practicalities of these changes may be adopted relatively easily by family caregivers. However, there are emotional consequences and counselling can help the family to come to terms with their changing roles. Without such support, the home environment may be fraught with tension, marred with punitive measures and continuous conflict between family desires and the needs and desires of the person with dementia.

Through a malignant social policy, the family may have become socially isolated (Frude, 1990). As a result family members are unable to turn to friends for support. Further, families have ways of relating to each other that are not necessarily based on understanding each other's points of view. Especially in times of crisis, families revert to these ways and may, therefore, fail to acknowledge each other's experiences. Poor communication can be a cause for observable tension within existing relationships with the person with dementia (Keady & Nolan, 1995b). Systemic work can help family members to relate to each other and voice how changing roles have affected them (Marriott, 2001). A more cohesive, reflective group steps in, supporting one another, and preventing individuals becoming overwhelmed or burnt out. It can also effectively manage conflict resulting in agreement, or at least amicable compromise.

Another benefit of such systemic work comes from a lifespan perspective. The majority of people may be observed to become independent and to development relationships with (relatively) long term partners, with whom they may have families. It is suggested that these are the things that many individuals find important. It follows that the loss of these things are likely to cause distress. Wellbeing may be maintained if people with dementia are able to stay in their

home and family of origin for as long as possible. Eloniemi et al (1996; in Frölich, 1999) found that counselling and social support of carers, together with rehabilitative courses, focusing on the functional capacity of patients enabled people with dementia to remain at home for 66 months longer than a control group who had no support. Dementia is (given current knowledge) irreversible. Working with the PERSON with dementia is not, therefore, concerned with restoring the individual back to their original state. It is not a rehabilitative process. The aim is to improve the individual's quality of life, rather than "adding years to life", we are "adding life to years" (page 3 Frölich, 1999) and seeking to reduce excess disability (Body, Kleban, Lawton & Silverman 1971; in Bird, 2000).

Humans are adaptive. If required, and given the opportunity, they can change and adapt to changes in their functioning. Systemic work, with the person with dementia, their family and carers can enable adaptation. Families and carers can be educated in the problems resultant from a decline in ability. Through this, greater understanding, they may feel less frustrated and can help to identify solutions to the problems (Frude, 1990).

UNIVERSITY OF HERTFORDSHIRE LRC

Systemic: service provision

However, there may come a time when the person with dementia needs to move into residential accommodation. Homes for the elderly may be inappropriate as they tend to lack of understanding of the experience of dementia, which results in the labelling of behaviours as challenging. In such homes, rather than using medication solely for the management of biological symptoms, it may be overused to sedate individuals (Frölich, 1999). Further, staff may burnout as they strive to cope with what they perceive as awkward behaviour. Indeed, much research has shown that staff suffer extreme distress after episodes of challenging behaviour (Lanciotti, 1995).

Specialist service provision can be sensitive to individual needs as cognitive and functional abilities decline. For example the Dementia Advice and Support Service (DASS) project (Milne & Lingard, 2001) considers why and how problems arise, from the standpoint of the individual. The authors (Milne & Lingard, 2001) cite an example of compliance with medication. They assert that explanations for non-compliance may include poor memory or a lack of understanding of the need for, or importance of, medication. Once the clinician has established the reason for

non-compliance information is appropriately delivered to the client, thus increasing the likelihood of compliance.

Psychological work may be at the service development level, training staff who work directly with people with dementia. The importance of training was demonstrated by Spector et al (1999b) who found a correlation between training and experience of group leaders and the success of reminiscence therapy. Further, training that increases "humane" and "informed" care has been shown to reduce difficult behaviour (Edberg, Hallberg & Gustafson 1996; Berg et al, 1994; in Bird M, 2000).

Rawlings (1985) highlighted the importance of organisational factors in the promotion of purposeful activities. This is particularly relevant in light of the distress felt with declining roles and likely to revolve around emphasising and building relationships. An example is validation therapy, which was developed as an alternative to reality orientation and seeks to increase the amount of interaction between the person with dementia and his/her carers (Miller, 1996; in Neal & Briggs, 1999). A meta-analysis by Neal and Briggs (1999) of randomised control trials involving validation therapy found some positive trends in terms of greater self care, less irritation, less withdrawal and depression. Participants were also found to have higher mental status and less disorientation than control groups (Toseland et al 1997; in Neal & Briggs, 1999). There was also evidence that the validation group demonstrated more social behaviour and had higher morale (Robb, Stegman & Wolanin, 1986; in Neal & Briggs, 1999). However, the authors also point out that the validation therapy group were more agitated and there were no significant differences compared with the usual care and social contact control groups. As with the problems of interpreting the findings from trials of reality orientation, it is not possible to draw firm conclusions from such research. However, Neal and Briggs (1999) add that there are observational studies that suggest that validation therapy improves the amount and duration of interactions with people with dementia (Babins, Dillon & Merovitz, 1988). This may help to change staff attitudes towards people with dementia, increasing the occurrence of patient-centred care and hence, the quality of care.

CONCLUSION

Many of the reviews cited above have produced confusing results. This highlights the difficulty of seeing the person with DEMENTIA and suggests a need for case reports. The latter places emphasis on the PERSON with dementia. However, such emphasis does not mean that dementia only affects the person with the diagnosis. Indeed, Kitwood (1993; in Pratt & Wilkinson, 2001) described dementia as a combination of individual variables (personality, history and health), neurological impairments and social variables (attitudes, belief and behaviour of others). Changes also affect family, friends and staff that work with the individual. There are, therefore, many roles for psychology. Work may be with the PERSON, helping them to come to terms and adapt to changes. Or, psychologists may work with others, broadening their understanding of dementia and training them to work with this group of people. Such work is continuous, changing and adapting as the dementia progresses and maintaining the benefits that therapy can produce. However, there may be a few situations where it is useful to focus on DEMENTIA. These include access to services and service provision through the identification of a psychiatric population. Further, grouping people according to type or severity of dementia has enabled quantitative research, resulting in greater understanding of the course of dementia. PEOPLE with dementia compared with people with DEMENTIA does influence the nature of the psychological work with this group of people. It does not, however, mean that either emphasis precludes psychological work.

REFERENCES

- Barry, R. (2001). The Link Between Post – Traumatic Stress Disorder and Early Onset Dementia: A Case Study. Signpost, 6, 2, 34 – 37.
- Bender, M. P., & Wainwright, A. (1998). Dementia: reversing out of the dead end. PSIGE Newsletter, 66, 22 – 25.
- Bird, M. (2000). Psychosocial Rehabilitation for Problems Arising From Cognitive Deficits in Dementia. In Hill, R. D., Bäckman, L., & Neely, A. S. (Eds.), Cognitive Rehabilitation in Old Age. (pp 249 – 269) New York: Oxford University Press, Inc.

- Burgess, I.S., Wearden, J.H., Cox, T., & Rae, M. (1992). Operant conditioning with subjects Suffering from Dementia. Behavioural Psychotherapy, 20, 219-237.
- Butterworth, G., & Harris, M. (1994). Principles of Developmental Psychology. Hove: Lawrence Erlbaum Associates Ltd.
- Chapman, A., Jacques, A., & Marshall, M. (1994). Dementia Care: A Handbook for Residential and Day Care. London: Age Concern England.
- Charlesworth, G. (1996). Younger people with dementia. PSIGE Newsletter, 57, 15 – 18.
- Egan, G. (1998). The Skilled Helper: A Problem Management Approach to Helping (6th ed.). California: Brookes/Cole.
- Frölich, L. (1999). Psychosocial care in Alzheimer's disease: a clinician's perspective. Alzheimer Insights online: An International Educational Newsletter. <http://www.alzheimer-insights.com/insights/spe2/spe2j.htm>
- Frude, N. (1990). Understanding Family Problems: A Psychological Approach. Chichester: Wiley and Sons.
- Gaebler, H. C., & Hemsley, D. R. (1991). The Assessment of short-term manipulation of affect in the severely demented. Behavioural Psychotherapy, 19, 145 – 156.
- Keady, J., & Nolan, M. (1995a). IMMEL: assessing coping responses in the early stages of dementia. British Journal of Nursing, 4, 6, pp 309 – 314.
- Keady, J., & Nolan, M. (1995b). IMMEL 2: working to augment coping responses in early dementia. British Journal of Nursing, 4, 7, pp 377 – 381.
- Keller, J. F., & Bromley, M. C. (1989). Psychotherapy with the Elderly: A Systemic Model. In Weitz, R. D. (Ed.), Psychotherapy in independent practice: Current issues for clinicians. London: Haworth Press Inc.
- Lanciotti, L. (1995). Breaking the cycle. Nursing Standard, 10, 11, pp 22 – 23.

Marriott, A. (2001). Family Therapy with Older People. Signpost, 6, 2 pp 31 – 33.

Meade, R. (1998). Attachment, Awareness and Dementia Care: The development of a research instrument. PSIGE Newsletter, 66, pp 22 – 25.

Milne, A., & Lingard, J. (2001). The Mental Health Foundation and Mental Health in Later Life. Signpost, 6, 2, pages 6-10.

Neal, M., & Briggs, M. (1999). Validation Therapy in Dementia. Cochrane Library, Issue 1. Oxford: Update Software.

Parker, J. (2001). Interrogating Person-centred Dementia Care in Social Work and Social Care Practice. Journal of Social Work, 1, 3, 329 – 345.

Perrin, T. (1996). Problem Behaviour and the Care of Elderly People. Winslow Press Ltd: Oxon.

Pratt, R., & Wilkinson, H. (2001). “Tell me the Truth”: The effect of being told the diagnosis of dementia from the perspective of the person with dementia. London: Mental Health Foundation.

Rawlings, S. A. (1985). Lifestyles of severely retarded adults in hospitals and small residential homes. British Journal of Social Work, 15, pp 281 – 293.

Roth, M., Huppert, F. A., Tym, E., & Mountjoy, C. Q. (1998). The Cambridge Examination for Mental Disorders of the Elderly. Cambridge University Press, Cambridge.

Spector, A., Orrell, M., Davies, S., & Woods, D. (1999a). Reality Orientation for Dementia. Cochrane Library, Issue 1. Oxford: Update Software.

Spector, A., Orrell, M., Davies, S., & Woods, D. (1999b). Reminiscence Therapy for Dementia. Cochrane Library, Issue 1. Oxford: Update Software.

Stokes, G. (2001). Challenging Behaviour in Dementia: A Person-Centred Approach (2nd ed.). Oxon: Speechmark Publishing Ltd.

World Health Organisation. (1986). Dementia in Later Life: Research and Action. Report of a WHO Scientific Group on Senile Dementia. WHO Technical Report Series 730. Geneva: WHO.

Wilcock, G. K., Bucks, R. S., & Rockwood, K. (1999). Diagnosis and Management of Dementia: A manual for memory disorders teams. New York: Oxford University Press.

Williams, D. D. R. (1995). Services for younger sufferers of Alzheimer's Disease. British Journal of Psychiatry, 166, pp 699 – 700.

Learning Disabilities:

Critically discuss the concept of “challenging behaviour” and the role of the clinical psychologist in assisting with this.

RACHEL AKANDE

Year 2

November 2003

Word count: 4969

INTRODUCTION

The way a person acts may be described in many ways, for example, passive, aggressive, or challenging. There are many factors that influence whether behaviour is judged to be challenging. The role of values and beliefs (including cultural norms and expectations), skills, experience and facilities available to caregivers are significant when defining “challenging behaviour”. It will be demonstrated that, whilst it is not possible to offer a definitive global definition, certain behaviours are usually classified as challenging. A definition of challenging behaviour is, therefore, an over-inclusive one, involving a wide range of behaviours that may or may not be present.

Clinical psychology’s role includes contributing to a greater understanding of the concept of, and intervention programmes to alleviate the difficulties that result from, “challenging behaviour”. Clinical psychologist’s approach to the problem differs from other disciplines by seeking to understand why the behaviour arises. That is, clinicians identify the underlying mechanisms that contribute to the development and maintenance of challenging behaviour. Following such an analysis, the clinician formulates the problem and makes intervention recommendations that help meet the needs of the individual and his/her social network. A needs-led intervention is particularly pertinent in today’s service provision. The current trend within learning disabilities services is away from containment: Priority now goes towards meeting the needs of service users in an effort to improve their quality of life and reduce the level of their handicap, enabling them to participate fully in society (DOH, 2001).

Given the difficulty in defining challenging behaviour, the discussion starts with a working definition of the 3 main components. The difficulty defining behaviour is considered both in terms of empirical research, and the nature of research that can be carried out in this area. It is suggested that, despite this difficulty, there are some known consequences of challenging behaviour and some recognised predisposing and environmental factors that influence it. The potential for psychological interventions, following from an understanding of the causes of the behaviour are discussed.

A WORKING DEFINITION OF CHALLENGING BEHAVIOUR

Definitions of challenging behaviour include the notions of harm, or the threat of harm, to the individual or to others and a social or cultural element (for example, Clements 1997; Emerson 1995).

Harm

There are a wide range of behaviours that may result in damaging physical, psychological or social consequences for the individual. For example, antisocial behaviour (such as stripping in public) and stereotypic behaviour (such as hand flapping) may result in attempts to segregate the individual from society because of society's discomfort at observing such actions. Similar consequences arise if the individual fails to acquire (or loses control over) regulatory functions (such as enuresis and encopresis). Physical harm ranges from overt behaviours towards the self or others, such as hitting or biting to less obvious self-injurious activities, such as pica or hair pulling. Emotional disturbances, such as anger and frustration may result in aggressive behaviour that may cause harm to the individual or others.

The threat of harm

Evaluation of the risk of harm is culturally defined: it depends on other's interpretation of behaviour. For example, challenging behaviour includes intentional cutting of oneself, but not accidental injury as a result of clumsiness. In this way, interpretations of behaviour are influenced by norms and expectations of the individual exhibiting the behaviour. Meyer and Evans (1989) suggest that it is those behaviours where one is compelled to intervene and prevent harm that are perceived as challenging.

Cultural factors

The compulsion to intervene may be influenced by societal values. For example, smoking is self-injurious. Some countries restrict smoking in public, others rely on service providers to provide "no smoking zones" and the state is not involved in policing such restrictions. Thus, the notion of "harm or threat of harm" is mediated by what society deems acceptable or unacceptable, which in turn influences whether it intervenes. Cultural values influence the definition of challenging behaviour, for example, it may be more acceptable for males to be aggressive than females (Emerson, 1995). Similarly, stereotypy may be more acceptable in

an institution than in public. Lowe and Felce (1994, in Emerson 1995) suggest that it is the level of social disruption that is associated with whether behaviour is labelled as challenging.

Interaction of “harm”, “threat of harm” and “cultural factors”

Cultural biases in the interpretation of behaviour may influence whether it is classed as challenging and whether it is perceived as posing a risk to the self or others. For example the infantilisation of a person with a learning disability (Wolfensberger 1972; 1975 in Emerson 1995). If the individual is seen as a child, others are likely to restrict the amount of responsibility s/he is given and, for example, suggest that as s/he is not able to evaluate danger, s/he cannot go out unaccompanied. The belief that the individual is a permanent child will, therefore, lead others to restrict the choices and decisions s/he is allowed to make.

Cognitive distortions arise out of the labelling of an individual as learning disabled. For example, Severence and Gastrom (1977, in Emerson 1995) demonstrated that the attribution of locus of control is influenced by knowledge that the individual has a learning disability. In their study, respondents were more likely to attribute successes to external factors (such as the simplicity of the task) and failures to internal “weaknesses” of the individual (such as their level of cognitive impairment).

So there is a dynamic relationship between harm, threat of harm and cultural factors. This relationship could create a vicious circle, where beliefs about the individual restrict the options available to him/her. Restrictions cause the individual to become frustrated. The frustration is displayed as challenging behaviour that strengthens negative attitudes towards the individual, thereby further reducing his/her opportunities. The concept of challenging behaviour is dependent on both the consequences of that behaviour, and the norms and expectations of the individual within a particular context.

To gain a full appreciation of the concept of challenging behaviour it is necessary to consider micro and macro forces that act upon the individual and his/her context. Indeed, there is merit in reviewing contributions from many areas of applied psychology. For example, norms and expectations influence the attribution of causality and staff experience and skills influence their capacity to

manage behaviour. Both factors will have some bearing on whether behaviour is perceived as challenging. Clinical psychologists participation in special interest groups enables them to draw upon, and contribute to the development of a wide range of theoretical knowledge bases that may help in reaching an understanding of the concept of challenging behaviour.

ROLE OF CLINICAL PSYCHOLOGY

There are many reasons for challenging behaviour. Some are emotional, for example mood swings; some are behavioural, for example disinhibition and impulsivity. Clinical psychologists work within a scientist-practitioner model. This may be at an individual level, establishing reason for and ways to alleviate difficulties that a referred client encounters and considering the consequences of problematic behaviour for carers. Alternatively, clinicians may be involved in empirical research that contributes to wider psychological knowledge on, for example, the prevalence of and attitudes towards challenging behaviour.

Empirical research

The importance of operationalizing any behaviour is critical, if it is going to be studied. As with other behaviours within society (such as an increased tolerance for swearing in the Media), the concept of challenging behaviour changes over time. Psychologists' ability to monitor societal changes in attitudes and beliefs enable them to be sensitive to changes in definitions of challenging behaviour. Indeed, Emerson et al (1988, in Emerson 1995) points out that despite discussions regarding what constitutes challenging behaviour, aggression, destructive and self-injurious actions continue to be interpreted as challenging. The absence of a global, static definition has resulted in researchers using these dimensions as measures of behaviour, for example, the extent of destruction of property or type of self-injurious behaviour may be measured. However, the use of these dimensions and the exclusion of others, influences prevalence studies (Jones and Eayrs, 1993).

How the concept is defined will influence what is measured and whether findings can be generalised from empirical research. A reductionist view of challenging behaviour, for example, seeing it in purely stimulus-response terms, will result in measures underestimating the impact of environmental variables. An intervention based on such research will either be inaccurate or of restricted value in changing

behaviour. The difficulty in arriving at a global definition may be why there is more research published on the effect of challenging behaviour than on intervention-outcome efficacy studies.

The effect of challenging behaviour on others:

Evans and Meyer (1985, in Emerson 1995) stress the importance of “meaningful outcomes”. That is, one should consider the effect of challenging behaviour on others and interventions should address the needs of caregivers. Further, Emerson, Cambridge and Harris (1991 in Emerson, 1995) state that research into the effectiveness of interventions should take into account all aspects of the individual’s network that may be affected by challenging behaviour or changes in that behaviour. For example, rather than just reducing the frequency or severity of challenging behaviour, providing the individual with alternative skills that have the same communicative function will enable care-givers to fulfil their care-giving role.

Research has examined the effect of challenging behaviour on others. For example, it has been shown to arouse strong emotions in staff (Hastings 1993 in Emerson 1995). Jones and Hastings (2003) used a model of helping behaviour to explore the relationship between attribution, emotions (in this instance anger and sympathy) and staff behaviour. The researchers found that emotional reactions to self-injurious behaviour were mediated by whether the behaviour was perceived as within the clients control or caused by some external variable. Emotional reactions included anxiety, which would result in staff stress, or anger that may result in punishment or abuse of the client.

Clearly, this is useful knowledge for learning disability services: in order to protect vulnerable clients from abusive practices, one must consider the effect of challenging behaviour on carers and care staff. The findings also support the assertion that a definition of challenging behaviour should include social beliefs and expectations about what constitutes difficult behaviour.

Understanding the causes of challenging behaviour

Predisposing factors

At an intrapersonal level, neuropsychological tests cover a wide range of brain functions. Psychometric tests are used to establish the level of cognitive impairments, by measuring attention, memory, communication, perception, planning and logical reasoning ability and insight. The information obtained from a

detailed assessment clarifies the nature and extent of impairments and identifies an individual's strengths and weaknesses. For example, an individual who has difficulty sustaining or dividing attention may become agitated when trying to perform a task in a noisy environment. Alternatively, a client with a poor memory and limited insight may accuse others of theft and become increasingly frustrated as he continually misplaces his belongings. Assessment may show that this client is capable of being highly organised. In which case, he would benefit from strategies such as a storage box, where all his belongings can be kept. Neuropsychological abilities may, therefore, be considered predisposing factors.

Psychoanalytic interpretations consider unconscious motives for behaviour, such as thoughts, fears and desires. For example, unspoken thoughts may build up in the individual and cause pain and anger. The individual may hit out (at others or the self) as a means of alleviating the build up of anger.

Self-reflection may be difficult for individuals without a learning difficulty. This is compounded by communication difficulties or a low cognitive capacity. That is, individuals may not have the verbal skills to express themselves. However, it is noted that not all psychoanalytical approaches require verbal communication, for example, arts or music therapy. In the main, psychoanalytic therapy is a slow process and is offered on a one to one basis. Such an approach may be appropriate for a largely independent person with a mild learning disability. However, where the individual has any form of assisted living and those involved with his/her care have expressed concern about challenging behaviour, such an approach may be seen by "the referrer(s)" as unacceptable, especially if the individual poses a threat to others. For those individuals, it may be more appropriate to consider offering psychoanalytic therapy in conjunction with another approach that meets the needs of the wider social network. However, many clinicians continue to view psychoanalytic therapy as inappropriate for this client group (for example, Carr 1997 in Emerson 1998).

Environmental factors

There may be many environmental reasons why an individual performs acts of behaviour that are challenging to others. Emerson (1995) states that behavioural interpretations are predominant in applied work with people with learning disabilities and challenging behaviour.

Behavioural interpretations:

Learning theories suggest that operant conditioning shapes and maintains behaviour. That is, behaviour is influenced by environmental consequences, or reinforcers, that change the frequency of behavioural occurrences. Reinforcers can be positive or negative. Positive reinforcers encourage behaviours by either providing the individual with a reward (such as warmth, comfort, praise or money) or discourage behaviours by presenting a punishment (such as an electric shock). Negative reinforcers discouraged behaviour by either withdrawing a stimulus (such as ignoring the individual) or by withdrawing a punishment (such as allowing the individual to return to a communal room following time out for disruptive behaviour).

Emerson (1995) points out that reinforcers are defined by their function. Staff behaviour may contribute to the development of (Hall, Oliver and Murphy, 2001, in Jones and Hastings, 2003) and reinforcement of (Hastings and Remington, 1994, in Jones and Hastings, 2003) challenging behaviour. For example, in an institutional setting a low staff-client ratio acts as an environmental constraint on the amount of time spent with each client. Within this context, attention is likely to become a reinforcer. A client may demand to be taken to the toilet every 5 minutes. Any contact with staff reduces the frequency of requests and as such constitutes a positively reinforcer for appropriate behaviour. Environmental constraints (the low staff-client ratio) result in the individual's need for attention not being met. This constitutes a negative reinforcer for the problematic behaviour (as the demanding results in otherwise unavailable attention). Withholding attention (perhaps because of other challenging behaviours) would constitute negative punishment. Another individual within this setting may find attention aversive. For her, attention is a positive reinforcer of challenging behaviour as she screams to communicate her desire to be left alone. This example demonstrates that the relationship between individuals and their environment(s) are dynamic and mediated by biological needs, individual preferences and previous experiences.

In order to establish what is maintaining challenging behaviour, the psychologist may carry out functional analysis. Having clearly defined the problematic behaviour, a monitoring period ensues. During this time, a record is kept of events (antecedents) that precede the behaviour and may be acting as triggers, and of the consequences of the behaviour. Consequences are stimuli that provide the

motivation to behave in a similar or different fashion the next time the antecedent is experienced. For example, a hypothesis regarding aggressive behaviour may be that it is an expression of anger, as a result of fear or used as a means of manipulating others (Blanchard and Blanchard, 1986). Analysis may facilitate the clinician's formulation and lead to the conclusion that the aggression is functioning as a communicator of fear.

Baer, Wolf and Risley (1968; 1987, in Emerson) provide guidelines for the use of applied behavioural analysis. They recommend that it should demonstrate the relationship between the environment and socially important behaviours. Techniques should be replicable and congruent with accepted theories of behaviour and any changes in the individual as a result of a behavioural intervention should be both socially significant and generalizable across environments or behaviours.

Cognitive interpretations:

Such approaches acknowledge motivations internal to the individual, such as the person's underlying thoughts or emotions. These interpretations are easier to apply when the individual is able to communicate verbally. Unlike other professionals allied to medicine, clinical psychologists are trained to hypothesize about motives. So even for severely impaired individuals, they may be able to suggest internal processes that contribute towards challenging behaviour.

From a cognitive perspective, the individual's perception and interpretation of environmental stimuli become important. For example, a person with a learning disability may be able to dress independently. However, if she does this, staff may leave her to her own devices and she is unlikely to receive praise (warmth and attention). Her alternative is to wander around the home in her under clothes, until staff help her. This way she receives much wanted attention. Further, over time, the repeated experience of being dressed may facilitate learned helplessness (Seligman, 1975). This example reinforces the assertion that staff behaviours may influence the development and maintenance of the problem, but from a cognitive perspective, it is the underlying needs of the individual that enable staff behaviour to function as a reinforcer.

Clients who seek therapeutic help may be willing to discuss their underlying thoughts and emotions. However, clients who are referred by others because those others find their behaviour inappropriate and challenging may find such an approach intrusive. Clinical psychologists use of empathy can help tease out client's needs and communicate to care staff the client's motivation for behaving in a particular way. The emphasis in clinical psychology on a non-judgemental approach enables the therapist to take an objective stance, so that all parties feel heard by the assessment process. For example, by emphasising the client's *need* for warmth and attention, helping him/her find a more appropriate way of meeting those needs becomes preferable to merely reducing attention-seeking behaviour. Such an explanation shifts the focus away from "a bad client", to one who has difficulty communicating. Empathy also facilitates a clearer understanding of staff's roles, resulting in their increased motivation to participate in teaching appropriate behaviour, rather than punishing inappropriate behaviour. Of course, the importance of explaining underlying processes is not restricted to cognitive approaches. For example, it may be useful to point out to caregivers that subconscious processes are in action and result in stimulus-response conditioning in behavioural interpretations.

Interventions that address challenging behaviour

This section starts with a behavioural approach, as this is the most common intervention for challenging behaviour (Emerson, 1995). Modern behavioural approaches acknowledge the role of other variables in affecting treatment efficacy. Once the behavioural principles have been introduced, a systemic perspective is used to consider these variables.

Behavioural interventions:

Following a period of defining the problem and monitoring behaviour, the clinical psychologist arrives at a formulation. Behavioural analysis often shows that inappropriate behaviours are a form of communication, that is, they are effective in gaining for the person something that they want. The psychologist makes recommendations that manipulate the environment in an effort to increase community living skills (Felce 1991 in Emerson 1995). Merely seeking to eliminate communicative behaviour that is influenced by numerous factors may be unrealistic and unethical: a constructional approach (Goldiamond 1974, in Emerson, 1995) teaches the person an alternative means of achieving the same

ends. Further, Schroeder and MacLean (1987, in Emerson 1995) point out that by merely eliminating a behaviour, the individual will develop another behaviour with the same communicative function. In order to reduce the risk of such symptom substitution, it is preferable to manage the replacement behaviour, thus ensuring that it is more appropriate and acceptable to the individual's social network. The techniques used to manage the development of suitable behaviours include differential reinforcement of other behaviour (DRO), differential reinforcement of incompatible behaviour (DRI) and differential reinforcement of adaptive behaviour (DRA).

In DRO, the client is reinforced for any behaviour that is not defined as challenging. For example, a client may shout a lot. Functional analysis shows that this eventually brings staff attention. A DRO programme would mean that when there was no shouting the client would receive staff attention. This means that the client still receives the reinforcement, but not for the inappropriate behaviour.

DRI reinforces behaviour that is incompatible with the challenging behaviour. For example, with a client who is very volatile and aggressive one would reward any behaviour that was co-operative, calm and helpful.

In DRA the client is reinforced for behaviour which is adaptive and which is unlikely to occur at the same time as the defined challenging behaviour. This is similar to DRI, but more defined. For example, if a client was frequently aggressive and had been attending an anger management course, a DRA programme would reinforce a client for carrying out their relaxation techniques appropriately when highly agitated.

DRO, DRI and DRA are techniques that incorporate teaching appropriate behaviour whilst aiming to reduce inappropriate behaviour. They are techniques that can be used when it is known the undesirable behaviour is being maintained by positive reinforcement.

Extinction is the deliberate withholding of reinforcement that is maintaining the behaviour. The most common use of extinction is in cases where inappropriate behaviour is maintained by staff attention. Lovaas (1982 in Emerson 1995)

described this as “benevolent enslavement”: staff members good intentions result in an increase in challenging behaviour. Extinction then takes the form of ignoring the person when they show the undesirable behaviour. Or it can be combined with DRA in which inappropriate behaviour is ignored whilst at the same time more appropriate behaviours are taught.

On a programme of extinction, there will often be an extinction burst. When someone has been receiving reinforcement for a particular set of behaviours over a long period of time, and suddenly it is taken away, the behaviours may increase in the short term. The psychologist can both forewarn the care staff of this, and support them through what is likely to be a difficult period: ignoring offensive or extremely irritating behaviour can be very difficult. This will enhance the staff teams commitment to the consistent use of the programme. This is important because inconsistent use of extinction will make the behaviour worse. Behaviour that is intermittently reinforced is more intractable.

The relationship of challenging behaviour with staff actions is not straightforward. For example, despite a desire for social engagement, a client may hit out if staff attempt to get her to participate in activities that she finds too demanding. When requests are not made, she does not exhibit challenging behaviour and so staff stop trying to involve her. As a result, the client will become increasingly withdrawn from social interactions and starts to show challenging behaviour in an effort to get more attention. This vicious circle has been termed a negative reinforcement trap (Emerson, 1995) as attention is both increasing and decreasing challenging behaviour.

In addition, it was mentioned above that societal beliefs about acceptable behaviour change over time. If staff habituate to challenging behaviour, they may be less likely to react to it, or may only react if it changes in some way such as increasing in frequency. Staff reactions then become intermittent reinforcers (sometimes producing a consequence to challenging behaviour and sometimes not). Again, the notion of intermittent reinforcement becomes an issue. Another aspect of the clinical psychologists role, therefore, is providing carers and care staff with ongoing support and guidance on the implementation of behavioural techniques.

A behavioural approach is appropriate for clients who have carers or care-staff that are able to manipulate their environment (as opposed to those clients who have limited supported living requirements). This has the potential to be problematic for the clinical psychologist, whose interventions are done by proxy. That is, staff teams or carers are required to implement the recommendations of the psychologist. Whilst the psychologist remains available for guidance and support, the involvement of “others” is likely to introduce many variables that cannot be totally controlled. Despite clinical psychologists work with staff teams, behaviour modification may be perceived as “artificial, conspicuous, difficult to implement for long periods of time, and deemed unacceptable by some caregivers” (page 113, Mace and Roberts 1993, cited on page 69 in Emerson 1995). For example, individual staff members’ relationships with the client may differ and some may be more motivated to follow the recommendations than others. Since such an approach requires consistency in the management of the individual it may be unrealistic. Behavioural approaches have demonstrated that people with learning disabilities do have the potential to change (e.g. Azrin and Foxx, 1971 in Emerson 1995) and have emphasised the importance of considering the role of environmental variables in influencing behaviour (Emerson 1995). However, these approaches may fail to take into account ethical considerations, (e.g. Zangwill, 1980 in Emerson 1995), such as whether the individual is given the option to refuse the intervention.

Given the negative view of behavioural approaches, it is perhaps understandable that it is rare for a purely behavioural treatment to be recommended by clinicians (Emerson, 1995). Clinical psychologists may, therefore, offer treatment packages that draw on other models. Whilst neuropsychological, cognitive and psychodynamic models are useful when formulating a problem, a systemic approach is arguably the most useful when recommending a care management or intervention plan.

Systemic interventions:

The current trend within the learning disability field is towards normalisation (Brown and Smith, 1992). This means that people with learning disabilities should have access to the same community activities as people without learning disabilities. Everyone should have access to and participate in those social roles that valued in their culture. For this to be possible, one must consider the social

impact of challenging behaviour. Research suggests that societal responses include abuse (Maurice and Trudel 1982, in Emerson, 1995) and inappropriate treatment (such as sedation, Pary, 1993 in Emerson, 1995). Further, responses are likely to result in the individual being excluded from society and institutionalised. This results in double discrimination; the individual has less access to community facilities and opportunities to develop community relationships are restricted.

Even with intrapersonal approaches, it is unrealistic to view individuals in isolation: the wider context or system (family, carers, and the neighbourhood, for example) will influence the individual. Systemic interpretations see the system as more than the sum of its parts and so concentrating on one individual's problems may ignore wider issues. For example, mother and father dispute the best way of providing care for their son, Jack. Father thinks he should be in residential care, mother thinks he should stay at home. To show that Jack is no trouble and that she can cope, mother does everything for him. Jack feels smothered and becomes aggressive. A behavioural approach may notice that mother's behaviour is an antecedent of the aggression. A cognitive or psychodynamic approach may identify the individual's need for independence. However, the systemic interpretation provides a different focus for intervention, revolving around how each part of the system affects the other parts.

Clinical psychologists act as mediators between the clients and services, explaining the needs of the clients, and underlying mechanisms causing and maintaining challenging behaviour. When a treatment has been recommended, they are involved in staff training and development that is fundamental to the implementation of a consistent approach. Similarly, they can explore staff attributions and emotional responses to challenging behaviour (the effect of emotional responses referred to, above). Challenging behaviour is stressful for staff (Qureshi, 1992 in Emerson 1995; Lanciotti, 1995). Stress may reach a level where staff absences become problematic and affect staff-client ratios. As mentioned earlier, attention may then become a negative reinforcer. Clinicians may offer debrief sessions after particularly traumatic episodes of challenging behaviour, or consultations to managers on guidelines for supervision. Consultancy values the attributes and abilities of other professions, whilst sharing

beneficial practices from the psychology field. For example, in nursing, supervision is an increasingly recognised staff need.

Systemic approaches may be limited as one can identify factors that influence the problem, but it is not always possible to change the behaviour of subsystems. For example, staff shortages that affect the amount of attention given to each resident may be constrained by finances which are out of the control of that organisation. Whilst it is possible to educate “the system” about causality or maintenance of the problematic behaviour, whether recommendations are taken up and changed may depend on many more factors, such as financial considerations, motivation, or understanding.

CONCLUSION

It has been demonstrated that the concept of challenging behaviour is dynamic and as such is culturally defined and differs across communities depending on norms and expectations held within each community. Personal attitudes and values, stereotypes and prejudices can all influence both what is defined as challenging, and reactions to that behaviour. For example, a person may believe that they cannot comment on inappropriate behaviour because the person who exhibits it has a learning disability. Further, interpretation of behaviour is influenced by cognitive distortions. For example, a poor relationship with a client may result in an increased tendency to attribute unacceptable behaviour as internal to the individual (“he’s just a bad person”). However, despite many contextual variables, definitions of challenging behaviour invariably include the notion of harm or threat of harm to the individual or others in his/her social network.

Clinical psychology’s role in analysing challenging behaviour revolves around identifying its’ communicative value. It is paramount that the function of behaviour is not oversimplified: there are likely to be multiple contributors rather than a simple “cause and effect” relationship. To do this, a wide range of information should be gathered using a multi-level framework. This framework identifies immediate influences (triggers and consequences) and longer term influences. The latter includes background factors that affect the motivation to perform a particular behaviour and the options available to that individual based on previous learning, personality and his/her strengths and weaknesses. Consideration is then

taken of the known environmental influences. These may be controllable (such as noise levels) or uncontrollable (such as the financial constraints on increasing staff-client ratios).

Given that there may be many different definitions, and that most behaviours reflect the operation of many different contributory factors (as opposed to a single cause), formulations and interventions for challenging behaviour may be numerous. The role of the clinical psychologist in this area is therefore naturally varied. The clinician must consider the social, familial and personal impact of the problematic behaviour as well as the needs of the client. It is likely that the clinician is concerned with changing the probability that challenging the behaviour will occur, rather than eliminating it all together. Facilitating more appropriate ways for the individual to communicate his/her needs does this.

REFERENCES

Blanchard, D.C. & Blanchard, R.J. (1986). Punishment and aggression: A critical re-examination. In R.J. Blanchard & D.C. Blanchard (Eds.), Advances in the study of aggression (vol. 2). Orlando: Academic Press.

Brown, H. & Smith, H. (1992). Normalisation: A reader for the nineties. London: Routledge.

Clements, J. (1997). Challenging needs and problematic behaviour. In J. O'Hara and A. Sperlinger (Eds.), Adults with Learning Disabilities. (pp 79 – 99). Chichester: John Wiley and Sons Ltd.

Department of Health. (2001). Valuing people: A new strategy for learning disability for the 21st century.

Emerson, E. (1995). Challenging behaviour: Analysis and intervention in people with learning disabilities. Cambridge: Cambridge University Press.

Emerson, E. (1998). Working with people with challenging behaviour. In E. Emerson, C. Hatton, J. Bromley, & A. Caine (Eds.), Clinical psychology and People with intellectual disabilities. Chichester: John Wiley and Sons Ltd.

Jones, C. & Hastings, R.P. (2003). Staff reactions to self-injurious behaviours in learning disability services: Attribution, emotional responses and helping. British Journal of Clinical Psychology, 42, 189 – 203.

Jones, R.S.P. & Eayrs, C.B. (1993). Challenging behaviour and intellectual disability: A psychological perspective. Worcestershire: British Institute of Learning Disabilities.

Lanciotti, L. (1995). Breaking the cycle. Nursing Standard, 10, 22 – 23.

Meyer, L.H. & Evans, I.M. (1989). Non-aversive interventions for behavior problems. London: Paul H Brookes.

Seligman, M.E.P. (1975). Helplessness. San Francisco: Freeman.

**SMALL SCALE SERVICE RELATED RESEARCH
PROJECT:**

**EVALUATION OF A NEW “OPT IN” SYSTEM FOR
PSYCHOLOGY REFERRALS.**

RACHEL AKANDE

YEAR 3

OCTOBER 2003

Word count 4804

Collaborators

Psychologists, Psychology administrator, Clinical Governance department and IT, all within a local adult mental health Trust.

Abstract

The study followed the implementation of a new “opt in” system for people referred to a psychology department from a community mental health team. The new system was developed to enhance service users’ choice and involvement in the referral process. The aim of the study was to investigate whether the new system resulted in fewer service users failing to attend their assessment appointments. The results show a slight decrease in the frequency of failed attendances. The implications of the new system on service users choice and involvement, clinicians’ time and service provision are discussed.

Background

Governmental influences on Health provision

Governmental policy has placed emphasis on the provision of Health services, within a backdrop of cost effectiveness. In particular, the National Service Frameworks for Mental Health (1999) guiding values and principles include that services should involve “service users and their carers in planning and delivery of care” and be “effective and acceptable [and] offer choices which promote independence” (page 4).

The National Service Frameworks for Mental Health (1999) includes five standards. Standards two and three refer to primary care and access to services. In particular, standard two states that “any service user should be offered effective treatments, including referral to specialist services for further assessment, treatment and care if they require it” (page 28). The Framework states that performance and achievement of standard two will include assessment of service users access to psychological therapies, as well as the review of local milestones, such as monitoring waiting lists. The document proposed that performance indicators would be that “arrangements [should be] in place to monitor access to psychological therapies” (page 98), and that “protocols [be]

agreed and implemented for the management of those who need referral to psychological therapies” (page 99).

The Framework states that change should be systematic, sustainable and measured. In order to ensure that change is improving service provision, the document sets out the domains that will be assessed to establish how services are performing. One of the domains that will be reviewed is the efficiency of services.

As a result of this Governmental drive, the National Institute for Mental Health in England has produced guides to help NHS staff improve service provision. For example, their annual report and strategic plan for 2003 focuses on access, booking and choice, with additional emphasis on user information (NIMHE, 2003).

National changes in service provision within the National Health Service (NHS)

Led by Department of Health directives, NHS service providers are required to review and modernise their practice. Indeed, mental health is a priority for the NHS (National Institute for Mental Health in England, 2002) and development centres have been set up to facilitate the modernisation process in local services.

The priorities of the National Institute for Mental Health in England's (NIMHE) Modernisation Agency for 2002 to 2003 include improvements in access to mental health services, care standards, and knowledge sharing. They also place emphasis on involving service users in the planning and delivery of services.

Implementation of modernisation

The Modernisation Agency recommends an objective review of services where a shortcoming is identified. The review could be of any process that involves patients, their carers or staff. It suggests a process of “Plan Do Study Act” (PDSA) model of service management.

Plan

The service, or part of the service, that has been identified as problematic is mapped. This provides a clearer picture of where the shortcomings and good practices lie, and demonstrates what needs changing. In this way process mapping allows the service to reflect on why and how the shortcomings are arising and to plan what changes could be implemented to improve the service. Process

mapping facilitates an objective review of the service. Further, by representing the process schematically, staff can predict the likely impact of changing one part of the process on other parts of the process.

Do

It is recommended that changes are implemented on a small scale, or for a short period of time, to establish what effect those changes have.

Study

Again, with the aim of objectively observing the service, the effect of the changes should be reviewed to establish whether they have improved efficacy and efficiency. In the event that the desired improvement has not been achieved, the reviewers should return to the “plan” stage and re-start the process.

Act

As the changes are likely to have been implemented on a small scale, successful changes can now be rolled out to other areas across the service.

Service-led rationale for piloting a change to the referral process

Efficient service provision

Many Trusts have been concerned with service users failing to attend appointments. For example, North East London and East Kent Trusts both published case studies on failed attendance in the Modernisation Agency’s “Mental Health Pilot” (2002). This is particularly important as psychology services are largely under resourced and this makes it difficult for them to meet the needs for the service. Waiting lists provide a measure of the outstanding demands on the service. However, this evidence is distorted if it contains information regarding individuals who do not intend to use the service. Netten and Curtis (2002) estimate an average cost of £65 per hour of client contact for employing a clinical psychologist. Ensuring that clients attend sessions wherever possible is important in a system that is restricted by financial constraints, such as the NHS. Further, psychotherapy is the collaboration between client and therapist and a pre-requisite is that the client wishes to participate and feels ready to engage with services.

In November 2002, the community mental health team psychology department received a draft Trust-wide directive on the policy for the care of service users who

do not attend appointments. The directive was aimed at improving risk assessment and required clinicians to telephone those service users who failed to attend. Psychology staff accepted this procedure for existing clients. However, as a tertiary service, staff believed that different consideration should be given to what constituted the best interest of service users and maximised therapeutic benefit and minimisation of clinical risk for those individuals who had not yet engaged with the service. That is, for those clients awaiting a formal, psychology assessment, a telephone call from the psychologist would be perceived as intrusive. This would be in direct conflict with the desired therapeutic relationship, which aims to facilitate change by collaborative work between service user and psychologist. Further, as the psychologist would not know the individual at that time, they would not be able to effectively establish the extent of any risk. The member of the community mental health team or consultant psychiatrist (who had referred the individual to the psychology department) would be best placed to assess the extent of any risk.

Service user involvement

There may be several reasons why patients do not attend (DNA) appointments. For example, they may not want the appointment, they have recovered, they may not have been aware of the referral, or may not have received the appointment.

It is important that the service user wants a psychological assessment. Lucas (2003) describes how the Mental Health Act has resulted in an implicit “coercive power” differential between service users and service providers. In addition, she describes how Western culture lends itself to the belief that professionals know best. As a result, service users may feel obliged to consent to the treatment recommended by clinicians. For example, a service user may agree to a referral to the psychology department because she/he believes that the referrer knows best, or that there is no other option. It does not necessarily follow that that service user wants or is ready to receive a service from the psychology department.

However, service users who passively agree to referral to psychology are likely to lack both hope and motivation (Deegan, 1996, in Lucas 2003). Both of which will have a detrimental effect on their participation in the therapeutic process and the development of a collaborative relationship with the psychologist. By giving the

service user information about the therapeutic process (that is, by explaining what psychologists do and the nature of psychological therapy), the individual is able to consider giving informed consent to receiving a psychology assessment. In addition, such an approach empowers the service user and acknowledges their own strength in deciding what services they believe will work for them. As Lucas (2003) put it, the answer to “what help is best?” is within the individual.

As a result of Governmental and local Trust directives, plus a need to empower service users at the earliest stage of contact with the psychology department, the referral system was reviewed. The PDSA model was adopted for the review.

PLAN

Figure 1 shows the map of the “old system”, illustrating the patient process from referral to psychology, through to attendance at the first assessment appointment.

As a tertiary service, the psychology department receives referrals from the community mental health team to which it is attached. Following receipt of a referral, the service user’s details were recorded on computer records, a cardex system and the waiting list. In addition, a letter was sent to the service user informing that his/her name was being placed on a waiting list and that they would be invited for an assessment in due course.

When an appointment became available, the service user received a letter inviting them to attend. Assessment appointments took place between the client and a member of the psychology team. It was therefore not until the assessment date that the service user was being invited to indicate whether he/she wished to be assessed.

In the event that the prospective client failed to attend the appointment, a second letter would be sent, offering another appointment. If the individual did not attend the second appointment, a “14 day” letter would be sent. This letter requested that he/she contact the department, if a psychology assessment was required and explained that in the event of the individual not wanting an assessment or not replying, he/she would be discharged back to the original referrer. In the event of DNA’s, the first formal contact with the referrer was delayed by the service having to wait to see if the potential client attends the second appointment and/or responds to the 14 day letter.

The review suggested that the process could be improved by requesting service users opt in to the process at an earlier stage. By inviting the individual to opt in and indicate that they wish to proceed with the referral, collaboration with the client would commence at the point of first contact with the service. In order to enable the service user to make an informed choice about whether he/she wanted a service, a Department of Health Booklet (“talking therapies”) would be sent to the potential client.

Another improvement could be made by sending copies of letters to the service user to the referrer. Any changes in the service user’s circumstances (such as a change of address, or being admitted to inpatient services), would be picked up at a much earlier stage. This would reduce the potential for the service user not being aware of the appointment.

The “new system” mapped in Figure 2 aimed to increase user empowerment by increasing the amount of information regarding the service that the user has prior to deciding whether she/he wishes to receive a psychology assessment.

Figure 1: "Old" referral system

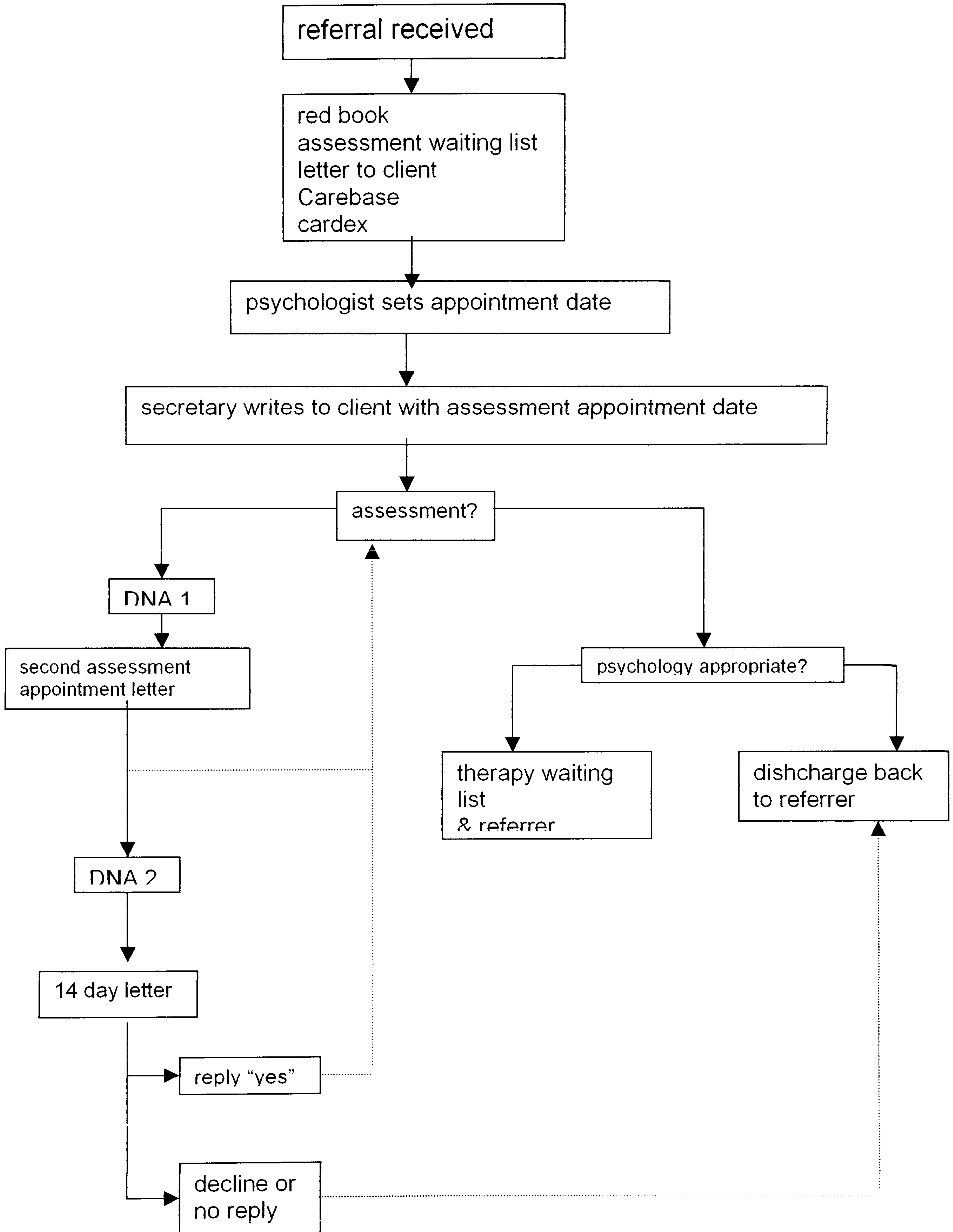
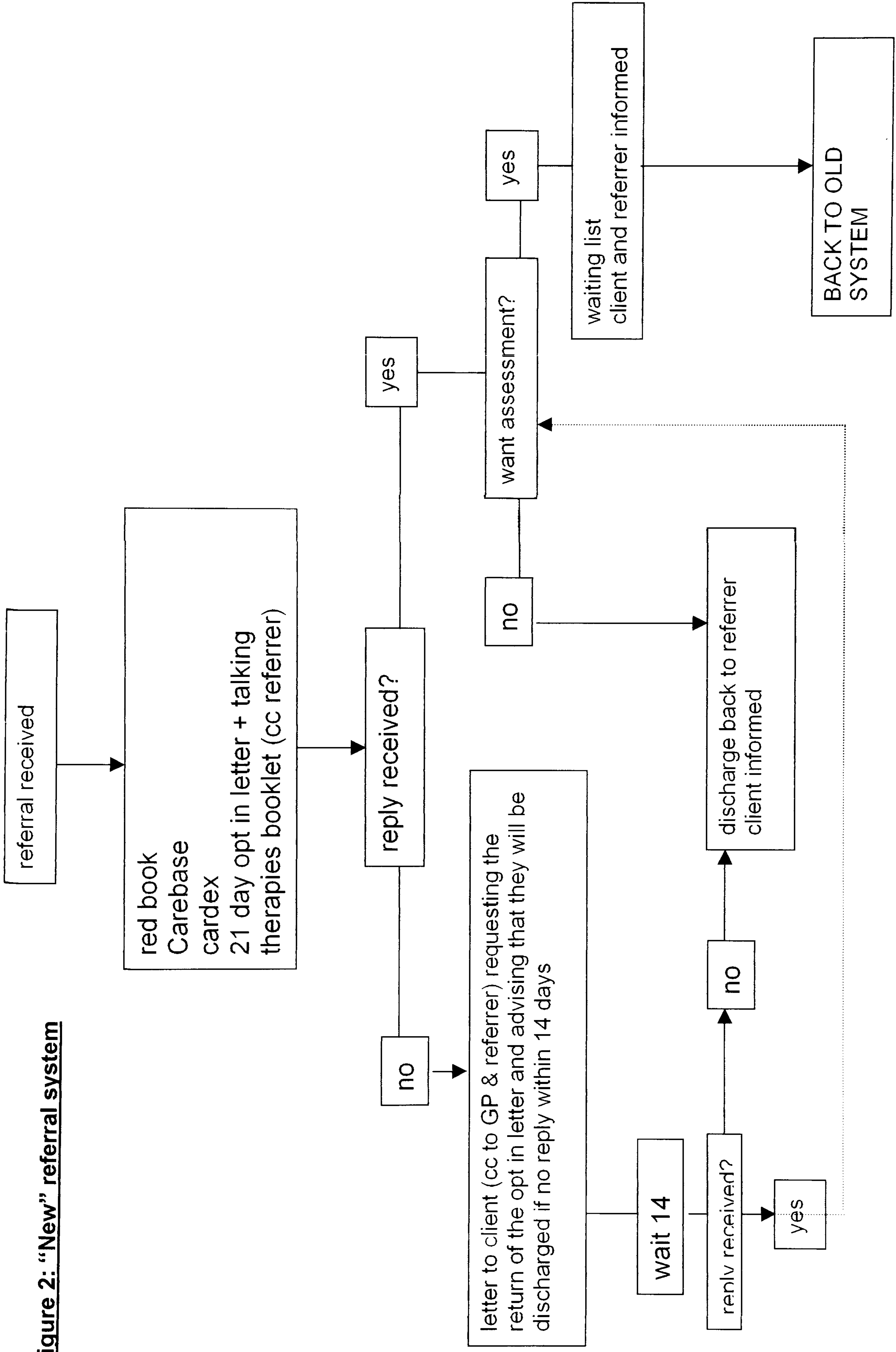


Figure 2: "New" referral system



DO

The new process was introduced in December 2002.

The present study

The current service-related research falls within the “STUDY” phase of PDSA and evaluates the new system, by comparing it with the old system. The aim of the research is also to establish whether the new system reduced the frequency of failed attendances to psychology assessment appointments.

Research question

Are there fewer DNA's to initial psychology assessments under the new scheme?

A DNA is defined as when the invited service user client does not attend or re-arrange the assessment appointment. Cases where the individual informs the service that they will be unable to attend will be excluded from the study.

Neuropsychological assessments and service users who require an interpreter will also be excluded, as different systems operate for these referrals.

Methodology

Design

A pre-post design, mapping the “old” and “new” client processes and comparing them to establish whether the new procedure has reduced the number of DNA's.

Participants

All referrals from the community mental health team to the psychology service.

Ethical issues

The research was discussed with the Trust's clinical governance department. As the research involved reviewing paper records and there was no contact with service users, it was confirmed that ethical approval was not required.

Measures

Client data are recorded in a psychology referral and waiting list ledger. This ledger provided data on the number of DNA's. DNA counts for the period January to April 2002 (old process) and 2003 (new process) were compared.

To investigate implementation difficulties and process fidelity, 11 referrals were randomly selected and reviewed. Information held in the 11 paper files were cross-checked with the ledger, to establish how robust the data were.

Procedure

Once all referrals for the two periods (2002 and 2003) had been allocated to a psychologist, referral lists were drawn up (see appendix 1, for an example of the covering letter and appendix 2 for the list template). These lists provided details of the clients that each clinician had intended to assess during the relevant period. Clinicians reviewed their diaries and ticked the column "tick if DNA 1", if the client failed to attend. Space was also provided for details of a second appointment and whether the client failed to attend that appointment too. The clinicians posted or emailed their completed forms to the researcher.

Data Analysis

The data from the completed forms were entered onto a computer and analysed using SPSS for windows version 9. Descriptive data were obtained by counting the number of referrals in each period. To establish whether the new system had reduced the number of DNA's, the frequency of DNA's between the two periods were compared.

Post hoc analyses were performed to explore whether the new system was more efficient. This was done by measuring the average time from referral to assessment.

Results

In 2002, there were 5 psychologists (1 part time trainee counselling psychologist, 3 full time clinical psychologists and 1 full time counselling psychologist) offering assessment appointments. In 2003, there were 3 full time clinical psychologists. All psychologists returned data relating to service users allocated to them from the identified referrals.

Over the two periods of data collection, the referral process to the psychology department did not change. That is, the same referrers were able to refer to the service. Similarly, there were no changes in other services that might impact upon

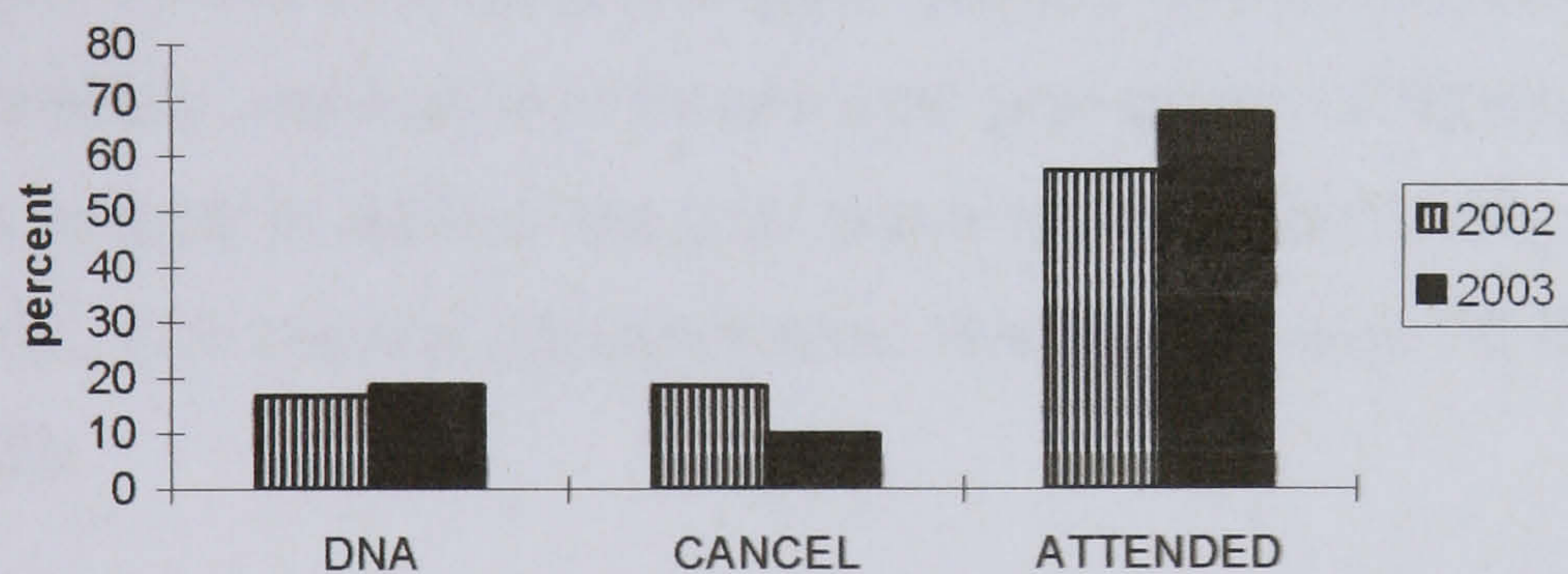
referral rates (such as the closure or opening of another mental health team in the locality). However, there was an increase in the number of referrals (59 in 2002, 69 in 2003). Data were not available for 4 of the referrals in 2002, and 2 referrals in 2003.

Frequency of DNA's

The frequency of DNA's to the first appointment between the two periods is shown in figure 3. There was an increase in DNA's by 1.9%. Service users did not attend 16.9% (n = 10) of the offered appointments in 2002, compared with 18.8% (n = 13) in 2003. In 2002 there were 11 cancellations (18.6%) and in 2003, there were 7 (10.1%). This represents a decrease of 8.5% in cancellations. 57.6% (n = 34) of service users attended their first assessment in 2002, compared with 68.1% (n = 47) in 2003. Attendance at the first appointment increased by 10.5%.

Figure 3.

Percentage of first appointments: DNA's, cancelled and attended.



In examining data relating to second appointments, data sets were excluded if the service user cancelled the first appointment and details of whether they were offered a second appointment were not available. This resulted in 9 being excluded from 2002 and 2 from 2003. Out of 10 service users who did not attend their first appointment in 2002, data on second appointments were available for 3 individuals. That is, clinicians did not provide information about whether the remaining 7 were offered a second appointment. Of the 3 service users who were offered a second appointment, 2 (66.6%) did not attend. In 2003, 13 service users did not attend their first appointment. Data on second appointments were available for 6 of those cases. Of the 6 service users who were offered a second appointment, 1 (16.6%) did not attend. This represents a reduction in the frequency of DNA's by 50%.

12 out of 49 service users offered first and second appointments failed to attend (24.4%) in 2002. In 2003, 16 out of 71 (22.5%) offered appointments were not attended. This is a reduction of 1.9%.

Fidelity check

11 client files were reviewed to establish whether the records tallied with the psychology ledger. All records were found to have been completed and the procedure prescribed by the new system followed accurately.

Post hoc analysis

Table 1 shows data relating to the number of days between receipt of the referral and the assessment. The mean number of days from receipt of the referral to date of the first appointment in 2002 was 68.17 (sd = 76.59) and 140.38 (sd = 93.01) in 2003. For second appointments, the mean was 68.67 (sd = 6.66) in 2002, and 132.36 (sd = 19.89) in 2003.

Although it is acknowledged that the mean is normally presented for ratio data (such as time) the large range in scores may make interpretation difficult.

Therefore, median scores are also presented. The median score from receipt of the referral to date of the first appointment was 52 days in 2002 and 113.5 days in 2003. For second appointments, the median was 72 days in 2002, and 129 in 2003.

TABLE 1. Number of days from receipt of referral to assessment

Period	Measure	No. of days from referral to appointment	
		Appointment 1	Appointment 2
2002	N	53	3
	Mean	68.17	68.67
	Std. Error of Mean	10.52	3.84
	Std. Deviation	76.59	6.66
	Range	447	12
	Minimum	6	61
	Maximum	453	73
	Median	52.00	72.00
2003	N	64	11
	Mean	140.38	132.36
	Std. Error of Mean	11.63	6.00
	Std. Deviation	93.01	19.89
	Range	452	84
	Minimum	60	94
	Maximum	512	178
	Median	113.50	129.00

For the “new system” period, the average time between receipt of the referral letter and the return of the opt in letter was calculated. The mean was 67.44 (sd = 138.22). Note: there was no receipt of referral to return of opt in period under the old system.

Discussion

Summary of results

The number of referrals to the psychology department increased by 10 between 2002 and 2003. Between the time periods the full time counselling psychologist and the part time trainee counselling psychologist both left the service. As a result, the number of psychologists offering assessment appointments fell from 5 to 3. However, the number of assessment appointments offered increased from 49 in 2002 to 71 in 2003. Of those appointments offered, DNA's to appointment 1 increased by 1.9%. Overall, the total number of DNA's (that is to appointment 1 and 2) fell by 1.9%. This improvement is likely to reflect a difference in the DNA rate to second appointments, which fell by 50%. The number of cancellations fell by 8.5%. The overall result was that the number of service users attending rose by 8.5%.

There was marked increase in the time between receipt of the referral and first appointment (from an average of 68 days up to 140 days). The mean time between receiving the referral and the service users' opt in letter was 67 days in time period 2 (2003).

Changes in the service

Contrary to what one would expect, the reduction in the number of psychologists between the two time periods did not reduce the number of appointments offered. Indeed, the number of appointments offered increased. This finding was not predicted, and the reason for such a change can only be speculative. The difference may reflect a consequence of changes in other duties that the psychologists were involved in. For example, it might be that service users receiving therapy in 2003 required shorter term therapy and were discharged sooner, thereby giving the psychologists more time to offer assessments. Alternatively, there may have been fewer research activities or administrative duties in 2003 than in 2002.

At the same time as there being fewer psychologists, the number of referrals was higher in 2003. External services had not changed. For example, the community mental health team covered the same geographical area and none of the community service provision changed. Again, the reason for the increase in referrals is not known.

Efficiency of the service

The process fidelity check demonstrated that the new system had been adopted for referrals received during the period January 2003 to April 2003. The improvement in DNA rates, especially to second appointments, suggests that the new process has reduced the number of “lost” hours. That is, by reducing the number of failed attendances, the clinicians spend less time waiting to see if the client is going to attend. Although speculative, this may explain how a smaller service was able to offer more appointments. It is also acknowledged that there were not many cases where data regarding the second appointment were available (n = 3 in 2002, n = 6 in 2003).

In 2003, service users spent more time on the waiting list before being offered an assessment appointment. However, the length of time between receipt of the referral and active participation by the service user did not change. There was no difference between the length of time from receipt of referral to assessment appointment (2002) and to the service user confirming that they wished to opt in (2003). In addition, the 2002 process meant that the first indication of whether the service user wished to receive a psychology assessment was when he/she did or did not attend the assessment appointment. The new system reflects a move towards requiring service users to explicitly confirm their desire to be assessed by a psychologist.

The effect of a longer waiting list on DNA rates may act as a confounding variable in this research. The longer a service user has to wait for an appointment, the greater the probability that they will not attend. For example, they may recover without intervention (spontaneous remission), decide that the service is unable to meet their needs, or arrange private therapy. Since the length of the waiting list increased during the period of this study, it is not possible to rule out the effect of such factors. In addition, the psychology department have now reduced the length of time between receipt of referral and first appointment (personal communication

with the department, 2004). A replication of this study which included the period January to April 2004, would enable further comment.

Service user's views

The psychology department's changes to the referral system were in some ways a result of an aim to increase service user participation from the outset of contact with the department. This was believed to be an important foundation for collaborative work with any individual who was then offered psychological therapy by the department. That service users did return their opt in forms and the decrease in cancellations, and increase in attendance at first appointments suggests that service users were more likely to engage in the new process.

Alternatively, the additional information about psychological therapy (in the form of the "talking therapy" Department of Health booklet) may have resulted in service users feeling more able to attend the appointment. This might have been because they better understood what types of services were offered by the psychology department. It is acknowledged that service users' were not consulted about the old or new systems. Further research could focus on service users' perceptions and experiences of being referred to the psychology department.

In addition, referrers to the department may also be considered as users, or "stake holders". Future research could obtain opinions from referrers to the psychology department. For example, referrers may wish to comment on the procedure when a referred person does not return the opt in form and is discharged back to them.

Implications for clinical practice

The current research has provided an evaluation of the new opt in procedure that will be useful for the psychology department. The new opt in process means that service users are actively engaging with the department by confirming that they wish to be assessed for psychological therapy. In relative terms, there is no difference in the stage at which service users are indicating whether they wish to receive psychological input: The length of time between receipt of referral to appointment date in 2002 is the same as length of time between receipt of referral to receipt of confirmation from the service user that they wish to opt in during 2003 (mean = 68.17, mean = 67.44, respectively). However, the new process means that service users are making their decision on the basis of more information and

communicating their choice by returning the opt in letter, as opposed to merely failing to attend, as was the case in 2002. It is suggested, therefore, that the new system is a move towards user empowerment and involving them in their own care. This meets both the requirements of the National Service Framework, and other literature suggesting that the individual knows which type of assistance is most beneficial in aiding their own recovery (for example, Lucas, 2003).

Collaboration between the service user and the psychology department starts immediately, with first contact, rather than service users being passive recipients of the service until the first appointment.

The reduction in total DNA's (to appointment 1, plus appointment 2) has already been mentioned. Further investigation may now be possible. Prior to the new opt in procedure, the psychology department considered a telephone call to the service user after failed attendance at an appointment would be intrusive. This was discussed departmentally in relation to Trust guidelines aimed at improving risk assessment and management. The findings do not impact upon the argument that the psychologist does not know the service user sufficiently well to be able to assess risk. Risk assessment should still be carried out by the referring community mental health team member or consultant psychiatrist. However, once an individual has opted in to the system, they have engaged with the service and failed attendance contradicts their indication that they wish to be assessed. Under the new system, it may be that clinicians will choose to telephone those service users who fail to attend their appointments. The comments of such service users could provide valuable insights that could indicate further changes to the system and further reduce the number of DNA's. This would be consistent with the PDSA model of service development, which suggests a dynamic process of continual reviewing, changing and improvement.

To maintain the PDSA model, further research could also establish the psychologists' views of the new system, and whether they consider there are still shortcomings in the referral process that could be mapped and changed.

Service provision implications

The National Service Framework for Mental Health (1999) suggests that achievement of standard two (access to services) may be assessed by monitoring waiting lists. The consequences of failing to achieve the standard are not

documented, but are likely to be negative. Even if there are no sanctions imposed by regulating bodies, the impact of lengthy waiting lists may include service users' believing that their needs are not being met, and staff becoming disheartened by their failed attempts to meet the demands on their service. However, interpretation of the waiting list figures is not clear. There was a large range in the length of time from receipt of referral to time of first appointment (in 2003 the minimum was 60 days, and maximum was 512 days).

The impact of this research may be to illustrate that evaluation of the service on the basis of a mere count of waiting lists is not possible. Whilst evaluation will not be straight forward, the research demonstrates that the psychology department have taken steps to address the problem of meeting demands on a service that is under resourced. Further, they have done so in a way that enhances the individual's choice.

Conclusion

The new opt in system has enabled the service to maintain the length of time between receipt of referral and active participation by the service user, despite a reduction in the number of psychologists offering appointments and an increase in the number of referrals. There was a small reduction in the number of failed attendances, which is largely a product of changes in the rate of DNA's to second appointments. The frequency of failed attendance to first appointments was higher under the new system than the old system. However, the change in procedure means that clinicians are now in a position to be more active in investigating these missed appointments.

The research suggests potential areas for further investigation to maintain the drive towards provision of an efficient service. To meet the "ACT" stage of the PDSA model, the following recommendations for further research have been fed back to the psychology department:

Service users' views

- Opinions of the opt in system
 - The impact of the talking therapies booklet on informed choice
 - Does the new system empower them?

- Do they believe that they are in collaboration with the department at an earlier stage?
- What about those service users who do not opt in?
- Their views about receiving a telephone call if they have failed to attend an appointment

Referrers' views

- Why have referral rates increased?
- What are their views on service users being discharged if they fail to opt in?

Psychologists' views

- Do they believe less time is wasted, waiting to see if service users will turn up to first appointments?
- Do they believe that collaboration with service users is enhanced or earlier because of the opt in system?
- Their opinions regarding ringing service users now that those individuals will have opted in to the system prior to their failed attendance
- What comments do those service users give for their failed attendance?
- Other shortcomings of the referral system

Service provision

- How was a smaller service able to offer more appointments?
 - Were there changes in psychologist other duties (such as fewer administrative responsibilities or research activities)?
 - Are there changes in service users needs (such as requiring shorter term therapy)?
- Would further replication of this study demonstrate that a reduction of the length of the psychology departments' waiting list has resulted in a reduction in the frequency of DNA's?

References

Department of Health. (2002). Choosing Talking Therapies? London: DH Publications. www.doh.gov.uk/mentalhealth/choosing.htm

Netten, A. & Curtis, L. (2002). Unit Costs of Health and Social Care. www.ukc.ac.uk/pssru

Lucas, R. (2003). Consent to intervention in mental health rehabilitation: Who knows best? Clinical Psychology, 31, pp 19 – 24.

National Service Frameworks for Mental Health: Modern standards and service models. (1999). London: DH Publications.

NHS Modernisation Agency. (2002). Mental Health Pilot – Improvement Case Studies. London: DH Publications.

National Institute for Mental Health in England. (2003). NIMHE: Recovery and change – mental health into the mainstream. Annual report and strategic plan 2003/04 – 2005/06. London: DH Publications.

Appendices

Example of the covering letter to Psychologists

I am doing an evaluation of the new opt-in system for my small scale service related research.

The research question is whether the new system reduces the number of DNA's to psychology assessment appointments. For the purpose of the study, a **DNA is an event where an assessment appointment is made, but the client does not attend or contact the service (prior to the date of the appointment) to re-arrange. i.e. those occasions where you expected the client to turn up.**

I hope to answer the question by comparing the period Jan – April, 2002 and 2003.

I attach details of allocations for the 2002 period and would be grateful if you would refer back to your diaries and confirm whether each client attended. I know you are all busy, but, please could this information be returned as soon as possible (18th of July at the latest). Paper form, or by email if you prefer (<named supervisor> will have an electronic version if you need it, or I can email it to you).

If you have any questions, please do not hesitate to contact me.....

Mobile <number>
Home <number>
Email <address>

I will wait until all referrals for Jan – April 2003 have been allocated before contacting you about this period.

THANK YOU!

<name>

Name of Psychologist – 2002, or 2003

Date ref rec'd	Name	Address	CB no.	Other comments from ref. book	Date of assess. appt 1	Tick if DNA 1	Date of assess. appt 2	Tick if DNA 2	comment

Appendix 2

Over General Memory Production in People with Posttraumatic Stress Disorder

Literature Review

Rachel Akande

February 2004

Year 2, DclinPsy., University of Hertfordshire

4693 words excluding references

1. Introduction

Autobiographical memory is personal to each individual. Such subjectivity makes it difficult to rigorously inspect and scrutinise its' accuracy. Further, theoretical explanations of processes involved in storage and recall are hampered by a lack of technology to physically track information as it passes through the brain. That is, we can only hypothesise the processes involved by observation of behavioural features. For example, if we are given three facts, but can only recall one, we can hypothesise that something has happened to two of the facts somewhere between storage and retrieval. We are, however, unable to say whether that something happened during the storage phase or the retrieval phase.

There are many diagnoses where distortions of memory are a characteristic feature. For example, in depression, there may be a bias towards recalling negative events. Observation of memory recall in these groups and comparison with differences to recall in people without diagnoses can advance our understanding of memory processes. That is, deviation from the norm and theorising about the cause of that deviation may help to explain the process.

This literature review originates from observations that people with posttraumatic stress disorder (PTSD) show a bias towards producing over general memories in response to tasks which require them to recall a specific memory. The purpose of this review is to gain an understanding of the causal mechanisms involved in this anomaly. In order to meet this aim, a brief account of theories of normal memory storage and recall will be described. Research demonstrating the nature of memory problems in PTSD will be discussed. Theories that may explain why this disruption occurs will be explored.

2. Normal memory storage and recall

2.1. Storage

System theories of memory (such as Kolodner's language-understanding theory, 1978, in Barsalou, 1988) suggest that knowledge, from previous, similar experiences defines what information we abstract and store about subsequent

experiences. Brewin (2001) suggests that in normal memory storage, new information is compared and assimilated with pre-existing beliefs and assumptions. This is a gradual process (McClelland et al., 1995, in Brewin 2001). New information is stored in two different ways; as a specific (episodic) event and at a more generic (semantic) knowledge based level.

Similarly, Schank (1982) postulates different subtypes of episodic memory by distinguishing between specific event memories, which he describes as “specific remembrances of particular situations” (cited on page 230), and generalised event memories, which are abstractions from many events.

Conway (1996) suggests autobiographical memory is arranged hierarchically within lifetime periods (for example, work and relationship themes). Lifetime periods or themes relate to the individual’s goals and have a beginning, middle and end (for example, first job, current job). Each theme can relate to the same time period, but must be distinctive in some way. Within each lifetime period, if events are repeated, or similar events are experienced, they are organised around a subordinate theme, known as general event (such as “journeys to work”, or “meals with friends”). If an event is totally unique, this would be the bottom of the hierarchy.

The deepest level contains event specific knowledge, such as what you wore to work on your first day, or data on a meal in the Mexican restaurant for a particular birthday. Conway suggests that event specific knowledge is contained in a “pool” of data, rather than an organised set of information. This pool contains information from the senses, vivid images and affect, that is, the micro-details of the event. There is an implied synthesis from specific memories to give semantic or general event memories. The proposed hierarchical nature of memory suggests that general knowledge is underpinned and supported by evidence from specific events. That is, the individual develops an understanding and ability to predict what will happen in certain situations because of the common elements of specific events. For example, one might associate, or synthesise, party with enjoyment because one has enjoyed the last three parties attended.

2.2. Recall

Tulving (1987) considered remembering as a largely pre-conscious process in which retrieval cues are brought into contact with stored information, causing parts of that stored information to be reactivated, and thus remembered. Such a perspective is widely accepted, for example Brewer (1996) considered philosophical writings, psychological studies of autobiographical memory and psychological laboratory studies of memory. His review concluded that recollective memories are mental images of specific episodes, that contain data on “place, actions, persons, objects, thoughts and affect” (page 60). They do not contain information about the temporal location of the event.

Similarly, Reiser, Black and Abelson (1985, in Williams 1996) suggest that in order to recall a memory, the individual must first identify which hierarchical structure (or lifetime period) it is stored in. Then, specifying criteria that distinguish that memory from other knowledge held within that structure are used to narrow down the search. Williams (1996) suggests the search starts with a category and contextual information is added later on during the search process.

Recall may be described as a constructive process involving

“an interaction between incoming retrieval cues and rather specific knowledge stored from past experiences. But neither the stored knowledge nor the retrieval cue is “the memory” – rather, remembering is produced by their interaction” (Craik, 1994, cited on page 257.).

3. The effect of stress on memory

A much used method for assessing memory has been to request respondents retrieve a specific memory in response to an adjective, or “cue word”. Cue word valence refers to the positive, negative or neutral connotations of the adjectives, for example trustworthy is positive, impatient is negative and silent is neutral. Research has explored how different populations respond to cue words, for example comparing the responses of people with and without PTSD to positively or negatively valenced cue words. Participants’ responses are analysed in terms of their specificity. A specific response is one that includes details of person, place

and time. An over general memory is one that does not include such details or is an amalgamation of several events.

Many researchers have observed that, in response to cue words and requests for retrieval of a specific memory, individuals with PTSD (McNally, Litz, Prassas, Shin and Weathers, 1994; McNally, Lasko, Macklin and Pitman, 1995) Acute Stress Disorder (Harvey, Bryant and Dang, 1998) and multiple personality disorder (Schacter, Kihlstrom, Kihlstrom and Berren, 1989) produce over general memories.

Wessel, Merckelbach and Dekkers (2002) compared specificity in survivors of World War II (WWII). Both controls and patients had been exposed to “serious war-related events” in their youth. Patients were identified from a medical and psychiatric private practice that treated victims of WWII. Whilst the 25 patients had various diagnoses, the largest proportion of them (15) had a diagnosis of PTSD. Controls were recruited through a newspaper advert. After a practice period in which respondents were instructed to produce specific memories in response to neutral cues (for example, car, shop), they were presented with 10 positive and 10 negative cue words (for example, happy and sad, respectively). They were allowed 60 seconds to respond to each cue word.

Whether the cue word had positive or negative connotations did not influence specificity. However, group membership did influence specificity. Participants with a psychiatric diagnosis were less specific than controls. This means that people who have been exposed to trauma and suffered psychiatric illness as a result are more likely to recall memories that lack specific details.

3.1. Disorganised memory storage

So, individuals with diagnoses associated with stress are more likely than controls to fail to produce memories that include the requested contextual information. This might be because stress results in a failure to process and integrate incoming information completely. This means that the event is not stored within the correct lifetime theme and that the semantic knowledge base is not updated. The outcome would be disorganised storage of the trauma memory. In support of this

explanation, Harvey and Bryant (1999) found that the narratives of individuals with acute stress disorder (ASD) were more disjointed, confused and repetitive.

Further support for disorganisation comes from psychotherapy outcome research that has demonstrated an improvement in the organisation of the trauma memory following treatment. van Minnen, Wessel, Dijkstra and Roelofs (2002) demonstrated that patients successfully treated by imaginal therapy (who showed at least a 50% reduction in PTSD symptoms) also demonstrated a reduction in disorganised thoughts post treatment, when compared to those who received the same treatment but had not recovered. Foa, Molnar and Cashman (1995) found that exposure therapy for survivors resulted in more organised rape narratives.

3.1.1. Premature inhibition as a theory for the cause of disorganisation

Brewin, Dalgleish and Joseph (1996) suggest that the trauma memory is not fully incorporated with the rest of autobiographical memory because of premature inhibition of processing. This premature inhibition is because the individual is attempting to preserve pre-trauma knowledge and beliefs from the conflicting knowledge arising from the trauma. Whilst there is some support for the storage of a disorganised trauma memory, it is not clear how this happens. Further, if premature inhibition of processing has occurred to protect the existing knowledge base, what effect does this have on the whole knowledge base?

Two underlying mechanisms may explain premature inhibition: cognitive resources and avoidance of aversive emotions.

3.1.1.1. Cognitive resources as an explanation for premature inhibition of storage

In seeking to explain how PTSD may be a pathological reaction to fear, Brewin (2001) implicates the involvement of the prefrontal cortex in an executive control capacity. Both attention span and arousal have been shown to affect executive functions. He argues therefore that they may also influence the success of memory processing and hence the organisation of memories. Where new information contradicts that which is already known, the system becomes overwhelmed. This new contradictory information cannot therefore be incorporated with existing data.

Brewin (2001) asserts that evidence for the effect of stress on memory processing comes from peritraumatic dissociation, which is marked by an alteration of mental state and detachment from ongoing experience. People who have experienced peritraumatic dissociation demonstrate more disorganisation in recall tasks (Murray et al., 2000, in Brewin, 2001).

There is also some neuro-anatomical support for theories of trauma disrupting storage. The hippocampus is involved in integrating incoming information which results in a complete memory. That is, the memory is given a context. The amygdala is involved in precognitive emotions, such as the feeling of fear without a cognition to support that feeling. Stress enhances the amygdala but reduces the function of the hippocampus (Pitman et al., 2000, in Brewin, 2001). This explains why flashbacks are a common symptom of PTSD and gives weight to a dual representation theory of PTSD (Brewin, Dalgleish and Joseph, 1996). The theory suggests that stress reduces the synthesis from the specific event memory to general knowledge. As a result, the individual accesses memories through the amygdala rather than the hippocampus. That is, the individual is more likely to feel fear than to think "this is frightening".

In summary, a cognitive resources theory of premature inhibition would predict that the disorganisation of memory storage is because of disruption to processing somewhere between the synthesis from specific event to general (semantic) knowledge. The disruption occurs where stress has increased amygdala function and reduced hippocampal function.

3.1.1.2. Avoidance as an explanation for premature inhibition of storage

An alternative explanation for premature inhibition is that there may be avoidance of processing which protects the individual from the discomfort of arousing aversive emotions (Foa and Riggs, 1993 in Foa and Hearst-Ikeda, 1996) that are generated when new information conflicts with existing knowledge.

Foa and Riggs (1993, in Foa and Hearst-Ikeda, 1996) assert that avoidance occurs in both conscious and unconscious processing, but the underlying mechanism differs. At a conscious level, it is a psychological process aimed at preventing the associated emotional arousal. Indeed, Spence (1988) suggests

that focusing on one piece of memory stops focus on other aspects of the event and evoking feelings. In this way, he suggests that such focus may be a defence mechanism. At an unconscious level, avoidance arises as a result of biological mechanisms that “shut down” the affective system, resulting in numbing. This is synonymous with Freud’s notion that memories are repressed to protect the self from the memory’s affective qualities (1914, in Conway, 1996). Whether conscious or unconscious, it seems likely that the individual fails to fully process and integrate some of the information related to the event. Christianson and Safer (1996) suggest that the individual attends to central details of the traumatic event and fails to focus on peripheral details. Failure to attend to this information may result in it not being stored, or connections to this peripheral information may be less well established than elaborated central details. That is, the memory is not fully integrated and the storage process is, therefore, incomplete.

Whether conscious or unconscious, this theory suggests that that the individual fails to fully process and integrate some of the information related to the event. Again, this theory suggests that there is disruption to processing between the storage of the specific event and synthesis to general knowledge. Thus leading researchers to suggest that there is disorganisation of the memory system.

In looking for a cause of over-generality, Wessel, Merckelbach and Dekkers (2002) found that intrusion and avoidance (measured by the impact of events scale) predicted non-specificity for negative but not positive cue words. So it could be that, because of the secondary emotions produced by cognitive distortions (for example, feeling guilt because the event is evidence that “I am useless”), the individual attempts to avoid recalling the details of the event.

Ortony, Clore and Collins (1988, in Hayes, Conway and Morris, 1992) suggest that emotions are reactions to the evaluation of consequences of events, actions of agents, or aspects of objects. Whilst Hayes, Conway and Morris (1992) suggest that this is a rather simplistic way of understanding the purpose and experience of emotions, it is consistent with some theories (such as Power and Dalgleish, 1996, in Power, Dalgleish, Claudio, Tata and Kentish, 2000) that suggest emotions are generated by memory processing. It is the avoidance of these emotions that interrupts the storage and integration of the memory into the autobiographical memory network.

The inter-connected nature of memories suggests that the trauma memory will be contained within a network of other negative memories. Avoidance of the trauma memory will therefore affect the recall of specific, contextual details of related memories. Positive memories do not generate aversive secondary emotions and therefore the individual is not motivated to avoid them. To give an analogy, to avoid the football results, one might decide to avoid watching the sports and news channels on television, as the scores may be shown on screen. However, it is probably safe to watch the cartoon network, as there is no relationship between cartoons and sports.

However, care must be taken in interpreting findings that suggest an association between intrusions or avoidance and specificity. Wessel et al. (2002) suggest measures of intrusion and avoidance are unreliable: Earlier studies have produced inconsistent results, some finding that intrusion but not avoidance related to specificity (Brewin, Reynolds and Tata, 1999), whilst others have found the opposite (Brewin, Watson, McCarthy, Hyman and Dayson, 1998). They recommend attention be paid to the content of intrusions and how they relate to the trauma memory. Although the mechanism by which intrusion and or avoidance affects specificity is not clearly understood, they hypothesise that it may be mediated by rumination. That is the repeated retrieval of a word may reduce the retrieval of related words as, through rehearsal, the recall of one word becomes habitual and prevents the recall of alternative words.

3.1.1.3. Summary of evidence for disorganisation to the memory system

In summary, it might be that there is a disruption to the storage process as a result of trauma. Brewin's research has progressed by focussing on the difference between trauma and ordinary autobiographical memories (Hellawell and Brewin, 2004) rather than investigating cognitive resource issues. Perhaps because avoidance is more readily open to investigation, there appears to be more evidence for this as an explanation for premature inhibition. However, the predictions that can be made by both theories do not differ significantly. Both theories suggest that there is disruption at the level of synthesis of general information from specific memories. That is, the new, specific event has not been fully assimilated into the memory hierarchy. Further, it is not clear how, or indeed if, unconscious avoidance that results in the shutting down of the affective system

differs from stress increasing the function of the amygdala and decreasing hippocampal function. Finally, it is noted that there are no published experiments designed to compare these theories and their utility in explaining disorganisation of the memory system.

Whilst the above theories have considered that a failure to produce specific memories was because the system has become disorganised as a result of the traumatic event, an alternative explanation may be that memory recall is tapping into a different task from memory storage. The observed bias towards over general memories may be because of an abnormal search process. Indeed Wessel et al., (2002) found that specificity was not related to general memory ability. That is, controls and patients did not differ on measures of immediate memory, total memory capacity and semantic retrieval. This suggests that general memory ability is not affected by trauma. So, whilst their study found a relationship between avoidance and over generality, their results can no longer be interpreted as supporting the assertion that the storage system has been disrupted. It seems more likely that some other mechanism is affecting the ability to recall all the contextual information that is required by the test.

With the emphasis now on recall, closer inspection of the type of memory errors that are made in response to cued recall tasks is required.

3.2. Types of memory errors in cued recall tasks

Most studies of memory specificity simply categorise memories as either specific or over-general/non-specific. However, over general memories can be further categorised as either “extended” or “categoric” (Williams and Dritschel, 1992).

3.2.1. Extended memories

Extended memories fail to provide the temporal location, or details of the time at which the incident occurred. Generally, researchers ask respondents to recall a memory of an event that is no longer than one day. It is acknowledged that this is an arbitrary time period. None-the-less, extended memories are those that fall into a longer time interval than has been dictated by the task demands. Williams

(1996) has observed that extended memories appear to be older and more distinct.

Tulving (1987) noted that with older episodic memories, what gets retrieved is frequently highly fragmented. For example, individual images from the distant past stand alone in time with hours, days, or even months either side of them being totally blank. Alternatively, it might be possible to recall two events quite clearly, but not really know which of them happened first. With older memories, therefore, one must reconstruct recall of events as best as one can.

It is suggested therefore that extended memories are less specific as they have become fragmented. They have not been accessed or rehearsed as much as lifetime themes or commonly occurring event memories.

3.2.2. Categorical memories

Categorical memories are memories that tell of repeated experiences. That is, they fall within the same lifetime theme, such as “I’m always in a rush to get to work”. They arise out of a failure in executive functioning (the Supervisory Attention System, Shallice, 1988, in Brewer, 1996), which may be as a result of stress (because of its effect on working memory), ageing, and/or brain damage (Williams, 1996). That is, there has been a failure to provide specific search details that enable the identification of one specific event memory.

3.2.3. Function of general memories

The two types of over general memories appear to be functionally independent. The function of extended memories is to distinguish a particular memory from all the other times that a similar event has happened. The function of categorical encoding is to “extract routine and commonalities” (Williams and Dritschel, 1992, cited on page 403). The distinction between categorical and extended memories has been overlooked in most research on memory specificity in PTSD. However, given that the purpose of categorical encoding fits in with the synthesis of general knowledge from specific events, it is suggested that over general memories produced are likely to be categorical in nature. Further Williams and Dritschel (1992) found low semantic fluency was related to categorical but not extended

memories. This is consistent with a failure to process and incorporate the meaning of a traumatic event into autobiographical memory.

It is stressed that overgeneral recall is not “abnormal”, but part of the process of memory recall. Indeed, Barsalou, Lancaster, Spindler, George and Farrar (1988 in Barsalou, 1988) found that the most common type of free recall in university students was of summarised events. Only 21% of responses were specific. They concluded that summarised events were functional in providing access to specific memories. This suggests that in trying to recall an event, a search enquiry or “retrieval goal” (Williams and Dritschel, 1992), such as “what did Jo wear to the party?” would first access the generic knowledge base (for “party”, “wear” and “Jo”). This would lead to more specific information, some of which fits the search enquiry: remembering the location of the party, remembering the music playing, seeing the outfit Jo was wearing. Williams and Hollan (1981) suggest that cues are evaluated to establish whether they meet the search criteria and the decision is made by the Supervisory Attention System (Shallice, 1988, in Brewer, 1996) as to whether to proceed with the existing search or terminate it and start a new one. [Note: “cues” in this context relate to the internally generated search enquiry cues, “party”, “wear”, “Jo”.]

In Schank’s view (1982), much of what we experience as a simple act of recollection is in fact a complex combination of both specific event memories and general event memories, supplemented by intentional memories, and influenced by the scripts for the situations and settings involved. That is, by conjuring up an isolated image (such as, your primary school classroom), one can add context (such as, what is known about schools, teachers, classrooms, being young, and so forth).

Memory recall may therefore be seen as on a continuum with summarised, general information at one end of the process and specific information at the other. Since events are organised hierarchically and chronologically, memory searches would result in the top part of the hierarchy being accessed (or rehearsed) more frequently than the bottom part. In this way, lifetime themes (which are general in their nature) would be more readily available than the specific event details (Barsalou, 1988); as specific events are less likely to be accessed, they are less easily recalled.

Over general memory retrieval appears to be a normal stage of the memory recall process. However, researchers have demonstrated that there is an aberration of the memory retrieval process. So in cued recall, people with PTSD produce more over general memories than controls. It has also been suggested earlier that avoidance may play an important role in memory processes in PTSD.

3.3. Avoidance as an explanation for premature inhibition of search/retrieval

In support of suggestions that the individual is trying to avoid retrieval of traumatic memories, Rubin (1986) proposed that the “emotional evocativeness” of a memory is related to recall specificity.

PTSD changes self representations (Eells, Horowitz, Stinson, and Fridhandler, 1993; Janoff-Bulman 1989, in McNally, Lasko, Macklin, and Pitman, 1995; McNally 1993; in McNally et al., 1995). McNally et al., (1995) compared veterans with and without combat-related PTSD. Veterans with PTSD produced less specific memories than controls in response to positive cue words. Whilst controls took longer to respond to negative cue words than positive ones, this difference was not found in veterans with PTSD. The authors conclude that PTSD affects individuals’ view of the self, making positive autobiographical memories more difficult to retrieve. Fivush and Shukat (1995, in Orbach, Lamb, Sternberg, Williams and Dawud-Noursi, 2001) point out that it is unclear whether reduction in specificity is due to avoidance of memories or embarrassment about what that memory implies about the self. However, since unpredictable events may cause the individual to evaluate themselves negatively (Gilbert, 2000), it may be that it is those negative evaluations that the individual is seeking to avoid during the search process.

Orbach et al., (2001) were interested in the production of categoric and extended memories, suggesting that they resulted from premature inhibition of a memory search. Based on developmental theories of autobiographical memory (for example, Williams and Dritschel, 1992) and empirical research that has demonstrated a relationship between trauma and over general memory (for example, McNally et al., 1995), Orbach et al., (2001) suggested that abuse in childhood would disrupt the development of memory narratives. They predicted that children who were survivors of childhood abuse would demonstrate “generic-

categoric" style of memory retrieval (page 1430). That is, memories recalled would fail to include details on person, place or action. Their results did not support this hypothesis, but did support their other hypothesis: high scores on a depression inventory were related to memory specificity. They therefore concluded that respondents were prematurely inhibiting their searches so as to avoid aversive memories.

As the trauma group more frequently failed to produce any memory (both specific and general types) they suggest this was due to attempts to avoid aversive memories that involved the self. Inaccurate or disrupted processing of the trauma memory may result in cognitive distortions which include over-accommodation (Resick and Schnicke, 1993, in Brewin, 2001). Over-accommodation is concerned with the post-trauma evaluations of the self. If these are excessively negative, there will be a disproportionate number of negative beliefs about the self and therefore more data in autobiographical memory that must be avoided in order to avoid aversive secondary emotions. It is suggested, therefore, that research reviewed earlier that has demonstrated the disorganisation of storage of trauma memories in people with PTSD may more appropriately be explained in terms of the respondents' attempts to avoid autobiographical memories that contain evidence of the negative self concept. Indeed, Wessel, Merckelbach and Dekkers (2002) acknowledge that their study did not measure or control for the extent of the trauma experienced. Further, they did not include a control group who had not been exposed to trauma. As a result, the authors conclude that exposure to trauma per se is an "insufficient explanation for over general recall" (cited on page 231). As Orbach et al. (2001) point out, depression is a common co-morbid disorder in participants with PTSD (for example, Wessel, Merckelbach and Dekkers, 2002). It may be that, if over accommodation results in an exaggeration of the evidence for negative self evaluations, the individual develops depression.

4. Conclusion

Studies of people with PTSD have shown that they fail to produce specific memories in response to cue words. Instead, memories fail to provide details on person, place or action (categoric over general memories) or a temporal location (extended over general memories). Two possible explanations were explored; disorganisation of memory storage or problematic retrieval. There remains an

unresolved predicament for researchers: how to assess memory storage that avoids confounders. The preferred methodology has been to examine memory output, or recall. But storage and recall of memories are two different tasks.

Given the available and accepted methodology used in memory specificity research, in particular, cued recall tasks, the evidence suggests that the bias arises at the retrieval stage of processing. There is some evidence that people with PTSD produce categoric memory errors. This supports a theory that errors arise because of attempts to avoid experiencing aversive emotions that are generated during the retrieval process. It appears that the causal mechanism is avoidance. The self-concept, cognitive resources and practice effects (rehearsal) may also be involved in influencing the level of specificity in recall tasks. Future research on how individuals with PTSD avoid certain memories may provide further empirical support. Such research could usefully describe how the process of avoidance prevents the individual moving sequentially through the memory hierarchy from general event knowledge to specific event memories.

5. References

Barsalou, L.W. (1988). The content and organization of autobiographical memories. In U. Neisser & E. Winograd (Eds.), Remembering reconsidered: ecological and traditional approaches to the study of memory. (pp. 193 – 243). New York: Cambridge University Press.

Brewer, W.F. (1996). What is recollective memory? In D.C. Rubin (Ed.), Remembering our past: studies in autobiographical memory. (pp.19 – 66). Cambridge: Cambridge University Press.

Brewin, C.R. (2001). A cognitive neuroscience account of posttraumatic stress disorder and its treatment. Behaviour Research and Therapy 39, 373 – 393.

Brewin, C.R., Dalgleish, T., & Joseph, S. (1996). A dual representation theory of posttraumatic stress disorder. Psychological-Review, 103, 4, 670-686.

Brewin, C.R., Reynolds, M., & Tata, P. (1999). Autobiographical memory processes and the course of depression. Journal of Abnormal Psychology, 108, 511 – 517.

Brewin, C.R., Watson, M., McCarthy, S., Hyman, P., & Dayson, D. (1998). Intrusive memories and depression in cancer patients. Behaviour Research and Therapy, 36, 1131 – 1142.

Christianson, S.A., & Safer, M.A. (1996). Emotional events and emotions in autobiographical memories. In D.C. Rubin (Ed.), Remembering our past: studies in autobiographical memory. (pp.218 – 243). Cambridge: Cambridge University Press.

Conway, M.A. (1996). Autobiographical knowledge and autobiographical memories. In D.C. Rubin (Ed.), Remembering our past: studies in autobiographical memory. (pp.67 – 93). Cambridge: Cambridge University Press.

Craik, F.I.M. (1994). Remembering as a mental activity. The Psychologist, 257 – 258.

Eells, T.D., Horowitz, M.J., Stinson, C.H., & Fridhandler, B. (1993). Self-representation in anxious states of mind: a comparison of psychodynamic models. In Z.V. Segal & S.J. Blatt (Eds.), The self in emotional distress: cognitive and psychodynamic perspectives. (pp. 100 – 122). New York: Guildford Press.

Foa E.B., Molnar C., & Cashman L. (1995). Change in rape narratives during exposure therapy for posttraumatic stress disorder. Journal of Trauma Stress, 8, 4, 675 – 690.

Foa, E.B., & Hearst-Ikeda, D. (1996). Emotional dissociation in response to trauma: an information processing approach. In L.K. Michelson & W.J. Ray (Eds.), Handbook of dissociation: theoretical and clinical perspectives. (pp 207 – 222). New York: Plenum Press.

- Gilbert, P. (2000). Shame and Humiliation in the treatment of complex cases. In N. Tarrier, A. Wells & G. Haddock (Eds.), Treating complex cases: the cognitive behavioural therapy approach. (pp 241 – 271). Chichester: John Wiley & Sons.
- Harvey, A.G., & Bryant, R.A. (1999). Brief report: A qualitative investigation of the organization of traumatic memories. British Journal of Clinical Psychology, 38, 401 – 405.
- Harvey, A.G., Bryant, R.A., & Dang, S.A. (1998). Autobiographical memory in acute stress disorder. Journal of Consulting and Clinical Psychology, 66, 500 – 506.
- Hayes, P., Conway, M.A., & Morris, P.E. (1992). Evaluating the cognitive structure of emotions using autobiographical memories of emotional events. In M.A. Conway, D.C. Rubin, H. Spiner & W.A. Wagenaar (Eds.) Theoretical perspectives on autobiographical memory. p 353 – 374. Dordrecht: Kluwer.
- Hellawell, S., & Brewin, C. (2004). A comparison of flashbacks and ordinary autobiographical memories of trauma: content and language. Behaviour Research and Therapy, 42, 1 – 12.
- McNally, R.J., Lasko, N.B., Macklin, M.L., & Pitman, R.K. (1995). Autobiographical memory disturbance in combat-related posttraumatic stress disorder. Behaviour Research and Therapy, 33, 6, 619 – 630.
- McNally, R.J., Litz, B.T., Prassas, A., Shin, L.M., & Weathers, R.W. (1994). Emotional priming of autobiographical memory in posttraumatic stress disorder. Cognition and emotion, 8, 351 - 367
- Orbach, Y., Lamb, M.E., Sternberg, K.J., Williams, J.M.G., & Dawud-Noursi, S. (2001). The effect of being a victim or witness of family violence on the retrieval of autobiographical memories. Child Abuse and Neglect, 25, 1427 – 1437.
- Power, M.J., Dalgleish, T., Claudio, V., Tata, P., & Kentish, J. (2000). The directed forgetting task: application to emotionally valent material. Journal of Affective Disorders, 57, 147 – 157.

Rubin, D.C. (Ed.) (1986). Autobiographical memory. Cambridge: Cambridge University Press.

Schacter, D.L., Kihlstrom, J.F., Kihlstrom, L.C., & Berren, M.B. (1989). Autobiographical memory in a case of multiple personality disorder. Journal of Abnormal Psychology, 98, 508 – 514.

Schank, R.C. (1982). Reminding and memory organisation. In W.G. Lehnert & M.H. Ringle (Eds.), Strategies for natural language processing. New Jersey: Erlbaum.

Spence, D.P. Passive Remembering. (1988). In U. Neisser & E. Winograd (Eds.), Remembering reconsidered: ecological and traditional approaches to the study of memory. (pp. 193 – 243). New York: Cambridge University Press.

Tulving, E. (1987). Multiple memory systems and consciousness. Human Neurobiology, 6, 67 – 80.

van Minnen, A., Wessel, I., Dijkstra, T., & Roelofs, K. (2002). Changes in PTSD patients' narratives during prolonged exposure therapy: a replication and extension. Journal of Traumatic Stress, 15, 3, 255 – 258.

Wessel, I., Merckelbach, H., & Dekkers, T. (2002). Autobiographical memory specificity, intrusive memory, and general memory skills in Dutch-Indonesian survivors of World War II Era. Journal of Traumatic Stress, 15, 3, 227 – 234.

Williams, J.M.G. (1996). Depression and the specificity of autobiographical memory. In D.C. Rubin (Ed.), Remembering our past: studies in autobiographical memory. (pp.244 – 267). Cambridge: Cambridge University Press.

Williams, J.M.G., & Dritschel, B.H. (1988). Emotional disturbances and the specificity of autobiographical memory. Cognition and Emotion, 2, 221 – 234.

Williams, J.M.G., & Dritschel, B.H. (1992). Categorical and extended autobiographical memories. In M.A. Conway, D.C. Rubin, H. Spiner & W.A.

Wagenaar (Eds.) Theoretical perspectives on autobiographical memory. p 391 – 410. Dordrecht: Kluwer.

Williams, M.D. & Hollan, J.D. (1981). Processes of retrieval from very long-term memory. Cognitive Science, 5, 87 – 119.

Autobiographical memory and depression: an investigation of over general
memory processing on recall tasks

RACHEL SARAH AKANDE

A thesis submitted in partial fulfilment of the
requirements of the University of Hertfordshire
for the degree of Degree of Doctor of Clinical Psychology

The programme of study was carried out in the Department of Psychology,
University of Hertfordshire

November 2004

CONTENTS

ABSTRACT

	Page
1 INTRODUCTION	88
1.1 Outline	88
1.2 Clinical symptoms and diagnostic issues	89
1.3 Cognitive model of depression	92
1.4 Memory and depression	95
1.4.1 Overview of a cognitive “stage” models of memory	95
1.4.2 The significance of long term memory	95
1.4.3 Processes involved in autobiographical memory	97
1.4.3.1 Hierarchical Storage	97
1.4.3.2 The nature of autobiographical memory recall	98
1.5 Memory Specificity	99
1.5.1 Classification of autobiographical memories	100
1.5.1.1 Extended memories	100
1.5.1.2 Categorical memories	101
1.6 The link between memory specificity and depression	101
1.6.1 Specificity and memory style	102
1.6.2 The influence of cue valence on research findings	103
1.6.3 The impact of negative life events	104
1.6.4 Cognitive aspects of depression and their impact on applied to memory	105
1.6.4.1 Over general recall as a result of emotional avoidance	105
1.6.4.2 The role of emotions in recall	105
1.6.4.3 The role of rumination in autobiographical memory	107

1.6.4.4 Evaluation of relationship between avoidance and over generality	108
1.6.4.5 Free recall as a method for observing memory retrieval	108
1.6.5 Rationale for the current study	109
1.6.5.1 Originality of the study	110
1.7 Hypotheses	111
2 METHOD	113
2.1 Design	113
2.2 Recruitment	113
2.2.1 Depressed group	113
2.2.2 Comparison group	114
2.3 Ethical Considerations	114
2.3.1 Approval	114
2.3.2 Considerations	114
2.4 Participants	115
2.5 Procedure	115
2.6 Measures	116
2.6.1 Screening questionnaire	116
2.6.2 Beck Depression Inventory	116
2.6.3 Memory tasks	117
2.6.3.1 Standard cued recall task	117
2.6.3.2 Free recall task	118
2.7 Coding of responses and generation of variables	118
2.7.1 Standard recall task	119
2.7.1.1 Specific memories	119
2.7.1.2 Extended memories	119
2.7.1.3 Categorical memories	120

2.7.1.4 Missing responses	120
2.7.2 Free recall task	121
2.7.2.1 Dividing transcript into individual memory units	121
2.7.2.2 Specific memories	122
2.7.2.3 Task-related utterances	122
2.7.2.4 General memories	123
2.7.3 Analysis	124
2.7.3.1 Analysis for standard recall task	124
2.7.3.2 Analysis for free recall task	125
3 RESULTS	127
3.1 Overview	127
3.2. Initial considerations of the data	127
3.2.1 Generation of data sets	127
3.2.2 Descriptive statistics of sample	127
3.3 Standard recall task	129
3.3.1 Productivity of the groups	130
3.3.2 Rate of general responses between groups	130
3.3.3 Types of memories produced by each group	132
3.3.3.1 Proportion of specific responses	132
3.3.3.2 Proportion of categoric responses	133
3.3.3.3 Proportion of extended responses	134
3.3.3.4 Age as a confounder	135
3.3.4 Summary of findings on standard recall task	136
3.4 Free recall task	136
3.4.1 Productivity of the groups	136
3.4.2 Rate of general memories between groups	137
3.4.3 Frequency of types of memory-pairs between groups	139
3.4.3.1 Proportion of pair types	140
3.4.4 Age as a confounder	141

3.5 Summary of findings	143
4 DISCUSSION	144
4.1 Overview	144
4.2 Discussion of main findings	145
4.2.1 Quantitative analysis	145
4.2.1.1 Generality of memories	145
4.2.1.2 Types of over general memories.	146
4.2.1.3 Memory retrieval process.	147
4.3 Qualitative analysis	148
4.3.1 The use of a search enquiries.	150
4.3.2 The use of identification tags	151
4.3.3 The hierarchical structure of memory	153
4.3.4 Navigation around the autobiographical memory network	154
4.3.4.1 Movement down the hierarchy	154
4.3.4.2 Movement up the hierarchy	155
4.3.5 Starting new searches	156
4.4 Relevance of the findings to theoretical issues and the literature	156
4.4.1 The role of avoidance of emotions	158
4.4.2 The role of rumination	160
4.5 Implications of the study	162
4.5.1 The self-concept and negative thinking	162
4.5.2 Problem solving	163
4.5.3 Diagnosis	164
4.5.4 The likelihood of relapse	165
4.6 Limitations and recommendations of the study	165
4.6.1 limitations	165
4.6.1.1 Sampling issues	165
4.6.1.2 Design	166
4.6.1.3 Analysis	169

4.6.1.4 Recall tasks.	170
4.6.2 Recommendations for future research	171
4.7 Conclusions	173
REFERENCES	174
APPENDICES	184
LIST OF FIGURES	
Figure 1: Schematic illustration of Beck's (1967, 1976) cognitive model of depression.	93
Figure 2: Theoretical structure of stages of memory.	95
Figure 3: The hierarchical structure of memory storage.	98
Figure 4: Productivity between groups on the standard recall task.	130
Figure 5: Distribution of general memories between groups on the standard recall task.	131
Figure 6: Distribution of specific responses on the standard recall task.	132
Figure 7: Distribution of categoric responses on standard recall task.	133
Figure 8: Distribution of extended responses on the standard recall task.	134
Figure 9: Rate of recall on the free recall task.	137
Figure 10: Mean number of pairs between groups on the free recall task.	140

LIST OF TABLES

Table 1: Summary statistics for the sample.	128
Table 2: Frequency of each occupation type by group.	129
Table 3: Proportion of general responses, between groups on the standard recall task.	132
Table 4: Proportion of specific responses to standard recall task.	133
Table 5: Age as a confounding variable in the production of memory types	135
Table 6: Productivity of the groups on the free recall task.	137
Table 7: Proportion of general and specific memories on the free recall task.	138
Table 8: Independent samples tests for proportion of each type of pair on the free recall task.	141
Table 9: Age as a confounding variable in the free recall task	142

ABSTRACT

Depression is a prevalent diagnosis within psychiatric populations. People with depression have been shown to recall over general autobiographical memories. The current study uses a cognitive stage model of memory to explain the retrieval processes involved in autobiographical memory. Two memory tasks were used: a standard cued recall task and a free recall cued task.

Thirty individuals participated in the study: 15 clinically depressed individuals and 15 non-depressed controls. Analysis showed that the depressed group were significantly more over general than the comparison group. The free recall task provided data on the processes involved in retrieving a specific memory. The depressed group were observed to experience an aberration in this process. Further, they were less able to navigate around the autobiographical memory network. Large effect sizes were found between the groups.

The implications of these findings in terms of self concept and difficulties problem solving are discussed. In addition, the consequences for assessment, diagnosis, treatment and relapse are explored. Recommendations for future research are made.

INTRODUCTION

1.1 Outline

The current study arises from a general interest in memory and that individuals demonstrate a remarkable capacity to store information about the world and their experiences. I became particularly curious about the processes involved in the storage and retrieval of personal experiences, that is, “autobiographical memory”. This fascination originally started during my undergraduate studies, when I realised how difficult it was to observe autobiographical processes given the technology available at the time. Because of this difficulty, research knowledge has been developed mainly through studies that focus on clinical populations who demonstrate a deviation from the cognitive processes that are observed in non-clinical populations. In this way, comparison of clinical and control groups has led to theoretical explanations for cognitive processes.

The effect of a negative self concept is often central to many of the difficulties encountered by individuals with mental health problems. This is commonly observed during work in a clinical setting. For example, a client who perceives that he is useless will believe that he is powerless to change his circumstances. Self concept derives from an individual’s interaction with the environment (for example, Ryle, 1978). Thus, recollection and interpretation of one’s experiences are fundamental to the self concept. Further, access to beliefs and assumptions that tap into the self concept form a vital part of the therapeutic process. With a growing interest in autobiographical memory, and in seeking to narrow down the subject area, a literature search drew my attention to the types of autobiographical memory problems that may be encountered by individuals with mental health problems. This led to recent research that has observed anomalies in memory retrieval in depressed and post traumatic clinical populations.

The literature review (unpublished, Akande, 2004) examined research interest in over general memory in people with post traumatic stress disorder (PTSD). The critical review (unpublished, Akande, 2004) addressed difficulties in accessing a PTSD population and because of those problems accessing a clinical sample of people with PTSD, led to a project focused on over general memory in depression. As a result, the current study builds on autobiographical memory in people with

depression and this introduction will provide an extensive literature review relevant to memory and depression.

Depression is a mood state that causes a significant problem for the psychiatric population, accounting for up to 75% of all hospitalisations (Fennell, 1989). The two main psychiatric tools used to diagnose depression are discussed below. In summary, depression is characterised by feelings of sadness, inadequacy and hopelessness. It is a disorder that is marked by physical, cognitive and behavioural changes. Several factors can cause the development of depression and there are individual differences in its presentation. This results in the level of depression being on a continuum from depressive thinking in non-clinical populations to severely depressed individuals, whose symptoms have considerable impact upon their ability to function on an everyday basis. These individual differences are conceptualised within a cognitive model of depression. Next, a cognitive stage model of memory is introduced. Of particular relevance are the processes involved in autobiographical memory, since this is the area that has been shown to be deficient in people with depression. The contextual characteristics of individual autobiographical memory units are described. Research that contributes towards an understanding of the relationship between memory and depression is reviewed. The review leads to certain predictions about the differences one might expect between autobiographical recall in clinically depressed and non-depressed controls. However, the cause of those differences requires further exploration. As a result, the overarching aim of the current study is to explore why these differences arise.

1.2 Clinical symptoms and diagnostic issues

The diagnostic statistic manual, version 4 (DSM-IV, American Psychiatric Association, 1994) provides a framework for the classification of mental health problems. Axis 1 relates to clinical syndromes, of which, mood disorders are a subordinate category. This category provides a framework for the diagnosis of depression. The criteria, cited on page 327 are reproduced, below.

Criteria for Major Depressive Episodes

A. 5 or more of the following symptoms have been present during the same 2 week period and represent a change from previous functioning; at least one of the

symptoms is either 1: depressed mood, or 2: loss of interest or pleasure:

- 1: Depressed mood most of the day; nearly every day, as indicated by either subjective report (e.g. feels sad or empty) or observation made by others (e.g. appears tearful).
- 2: Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by subjective account or observation made by others).
- 3: Significant weight loss when not dieting or weight gain (e.g. a change of more than 5% of body weight in a month) or decrease or increase in appetite nearly every day.
- 4: Insomnia or hypersomnia nearly every day.
- 5: Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down).
- 6: Fatigue or loss of energy nearly every day
- 7: Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).
- 8: Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others).
- 9: Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

B. The symptoms do not meet criteria for a Mixed Episode.

C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

D. The symptoms are not due to the direct physiological effects of a substance (e.g. a drug of abuse, a medication) or a general medical condition (e.g. hypothyroidism).

E. The symptoms are not better accounted for by Bereavement, i.e. after the loss of a loved one, the symptoms persist for longer than 2 months or are characterised by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation.

Extract from DSM-IV, page 327.

Where an individual has less than 5 of the symptoms, minor depression may be

diagnosed.

The World Health Organisation's International Classification of Diseases (ICD-10, 1992) is also commonly used in psychotherapy research. The clinical description and diagnostic guidelines for depression are broadly similar to those of the DSM-IV. However, the ICD-10 includes a "bleak and pessimistic view of the future" (page 119), in its criteria, that does not appear in the DSM-IV.

Psychiatric diagnostic system such as the DSM-IV and the ICD-10, focus on descriptive dimensions. That is, categories are either present or absent. So an individual with functional difficulties may not meet criteria for diagnosis if s/he only exhibits 4 symptoms. In an effort to standardise diagnosis and minimise interpretative biases, the diagnostic tools have underplayed the role of clinician opinion. However, this also introduces the issue of variability of symptoms. Since symptoms may fluctuate on a daily basis, an element of chance is introduced into the process. This chance relates to the likelihood that the individual is currently experiencing symptoms at the time of the clinical interview. Further, a rigid diagnostic process may overlooks individual differences. Since the severity of symptoms is not assessed, the impact of those symptoms on the individual's functioning are also overlooked. For example, a psychiatrist may consider a lack of interest or pleasure as sufficient for a diagnosis of depression. However, those symptoms would not meet the criteria within the diagnostic guidelines. The problems of psychiatric diagnosis are reviewed by Kirk, Kutchins and Rowe (2003).

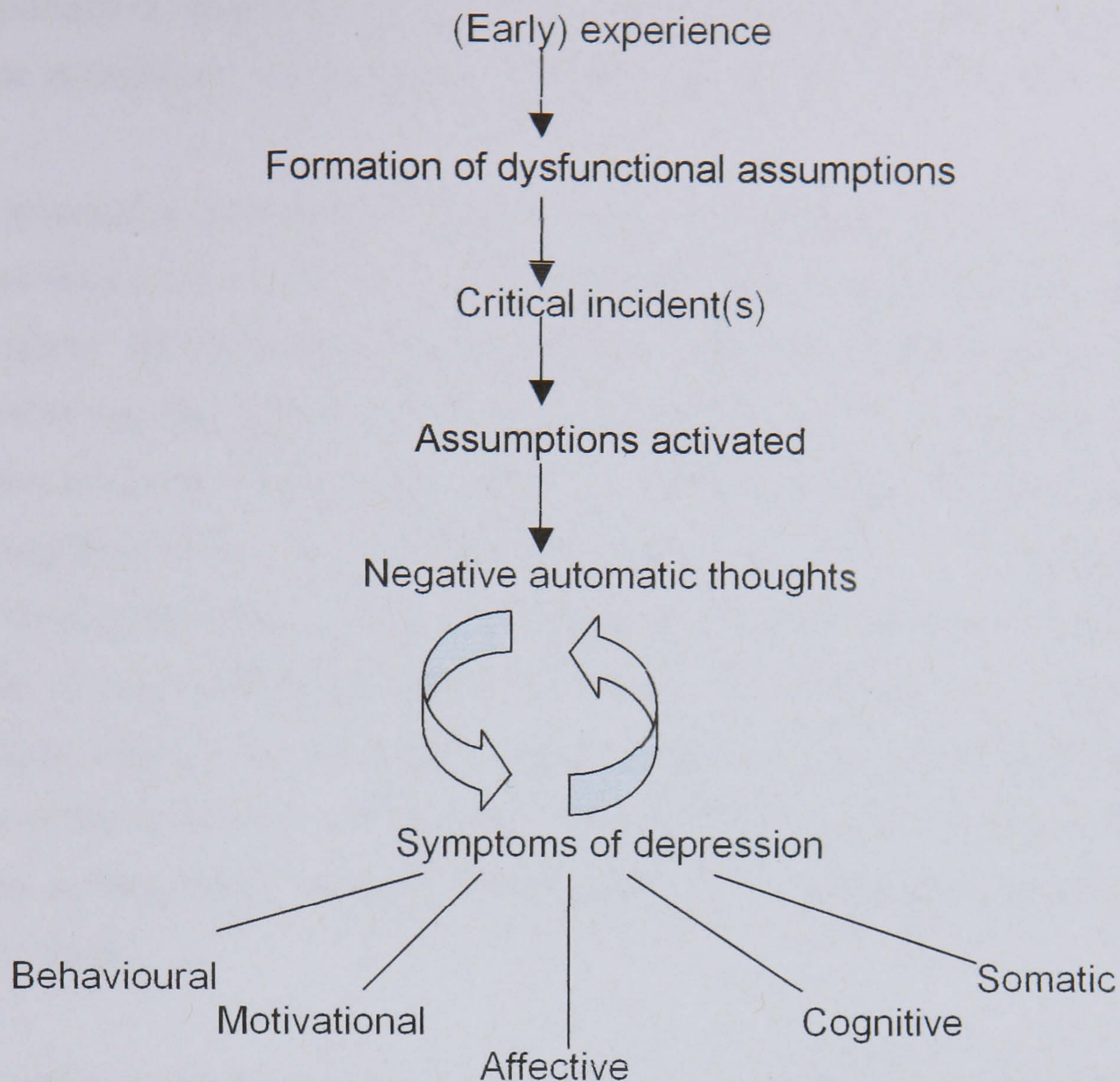
The utility of diagnostic measures forms an ongoing debate within Psychology and Psychiatry (see for example, *The Psychologist*, volume 17, numbers 7, 9 and 11). Price (2004) comments that, given the complexities of the human psyche, it is not surprising that measures fail to account for individual differences. None-the-less the overlap of symptoms between hypothetically distinct illnesses has resulted in an unreliable diagnostic process (Marzillier, 2004). Further, Marzillier (2004) argues that many illnesses are included or excluded by consensus opinion, instead of more rigorous investigation (such as observation studies). In support of this, he describes how homosexuality was removed from the DSM in 1974 following a vote by members of the American Psychiatric Association.

Despite the problems with diagnostic tools, psychologists need a common language with which to communicate with their psychiatric colleagues. In addition, there is increasing emphasis on evidence-based practice (for example, National Service Frameworks for Mental Health 1999). Therefore, in order to carry out research, awareness that idiosyncratic experiences of depression exist must be suspended. Individuals may then be categorised and comparison between groups can take place. However, those individual differences in experience must be reconsidered when generalising the results of that research.

1.3 Cognitive model of depression

There are many theories to explain the development of depression. “Biological” explanations include family studies (such as Klein et al. 1996). These studies generally show a higher rate of bipolar or unipolar probands in the relatives of people with depression than in the relatives of controls. However, an alternative explanation for this finding could be that relatives have similar backgrounds and as such have many shared experiences. Familial correlations could be explained by learning theory. That is, family members have *learnt* to be depressed. It is suggested, therefore, that the most useful theories are those that allow for both a biological predisposition and the role of experience. For example, the cognitive behavioural model in figure 1 includes the effect of early experiences (such as learning), internal variables (such as biological vulnerabilities and interpretative factors) and external factors (such as critical incidents). In addition, a cognitive behavioural approach considers the implications of depression upon thoughts, feelings and behaviours. It can explain a reduced sense of self, problem solving difficulties, cognitive biases and motivational difficulties.

Figure 1: Schematic illustration of Beck's (1967, 1976) cognitive model of depression. Reproduced from Fennell (1989, page 171).



Beck (1967) argued that assessing the dimensions of depression was unreliable; that is, clinician ratings were liable to biases because they involved judgements and interpretation on the part of those clinicians. He suggested that this method of assessment was, therefore, of limited benefit and developed a self rating instrument, the Beck Depression Inventory (BDI). The BDI was based on behaviour and objectively measurable symptoms/characteristics that are represented in the cognitive model (figure 1 above). Beck perceived depression as a complex disorder; as well as the importance of mood, he asserted that behavioural, cognitive, motivational and emotional factors should be measured. In addition, the BDI assesses the depth of depression as the respondent reports the number of symptoms present and indicates the severity of those symptoms.

The symptoms that are used to diagnose depression also cause functional problems for the individual. For example, impaired concentration can mean that an individual fails to complete any task that requires sustained attention. A reduction in behavioural activity may, therefore, be observed as reading a book or

watching a film become difficult. Poor concentration and behavioural inactivity will be further compounded if the individual is over tired because of disruption to the sleep pattern or is lethargic because of poor dietary intake because his/her appetite is reduced. Thus, the symptoms of depression interact with each other.

There are additional benefits of cognitive behavioural theories of depression. They provide a structure that helps clinicians explain a psychological formulation to the client. Diagrammatic representation of the model can include a historical account of the development of depression, together with the impact of the mood disorder on current functioning. There is a wealth of research and literature regarding the efficacy of cognitive treatments for depression, for example, Williams (1984) has shown that cognitive therapy is an effective treatment. Similarly, the modular structure facilitates research by enabling the researcher to focus and investigate each factor separately. For example, research has investigated the effects of depression on self concept (Beck and Stein, 1960 in Beck 1967); and problem solving (Marx, Williams and Claridge, 1992; Goddard, Dritschel and Burton, 1996).

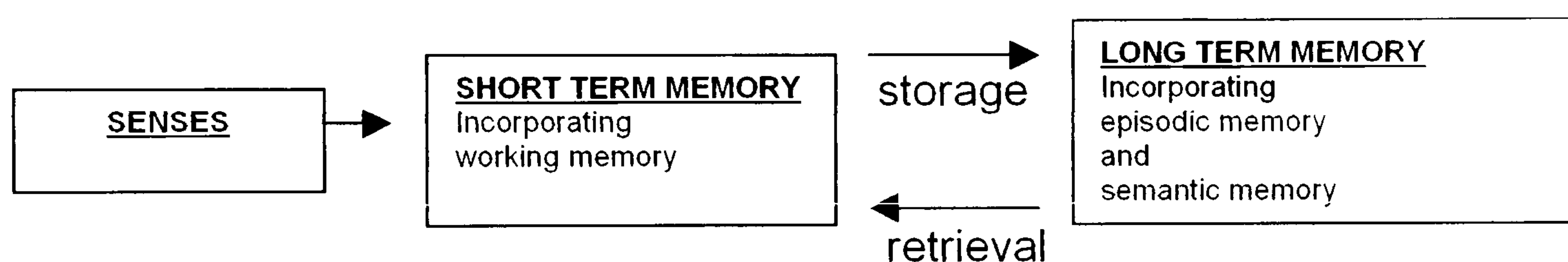
Beck (1967) suggests that the cognitive sequelae of depression have been overlooked because depression is viewed as an affective disorder. He aimed to address this oversight by demonstrating that, by comparison to non-depressed psychiatric patients, depressed patients were more likely to hold unrealistic conceptualisations and deviate from logical thought. The depressed group's thinking was characterised by themes of "low self-esteem, self-blame, overwhelming responsibilities and desires to escape" (page 230). Another recognised consequence of depression is that individuals experience slowed information processing speeds (Lezak, 1983). As suggested earlier, the symptoms of depression may interact and the anomalies in cognitive processes may result in increased functional difficulties. For example, low self-esteem, coupled with slowed information speed may alter the way the individual acts upon and reacts to the environment.

1.4 Memory and depression

1.4.1 Overview of a cognitive “stage” models of memory

In the 1960s and 1970s, theorists developed cognitive models of memory conventionally viewing it as involving a series of stages. This process and the theoretical structure of memory are represented in figure 2 below. This illustrates schematically how cognitive theories (such as Atkinson and Shiffrin, 1971; Baddeley, 1986) made a distinction between different phases and processes that occur during memory processing. It can be seen that these theorists saw the first stage of memory as the receipt of incoming information (from the senses). This information was then processed, in short term memory, and eventually stored in long term memory.

Figure 2: Theoretical structure of stages of memory.



1.4.2 The significance of long term memory

Long term memory is significant because it provides a store of information about the individual's past and a relatively permanent component of the memory system. Information within long term memory may be categorised as episodic memory for events (or “remembering”) and semantic meaning about the world, self and others (or “knowing”).

System theories of memory (such as Kolodner's language-understanding theory, 1978, in Barsalou, 1988) suggest that it is through previous experiences that we understand new experiences. Our knowledge, from previous, similar experiences defines what information we abstract and store about the new experience. New information is stored in two different ways; as a specific event and at a more generic knowledge based level. For example, we have episodic memories, such as buying our first car. We also have a generic or semantic memory, which, in this example would be that a car is a means of transport. Schank (1982) distinguishes between specific event memories, which he describes as “specific remembrances

of particular situations” (Schank, 1982, page 230), and generalised event memories. Generalised event memories are abstractions from many event memories, once the specifics of recurring event memories have been forgotten. Generalised event memories, therefore, are the common features of those event memories that constitute our knowledge about the world.

Some theories see semantic memory as abstractions from episodes (for example, Schacter, 1987, in Squire and Zola, 1998), that is, knowledge is derived from experiences. Others suggest that semantic information is obtained through the perceptual system and is independent of episodic memory (for example, Tulving, 1991, in Squire et al, 1998). Squire et al (1998) reviewed studies of people with amnesia in an attempt to clarify whether the two forms of long term memory were independent of each other. They conclude that there is a “slight weight of evidence” that semantic and episodic memory are related. However, they acknowledge that current technology does not allow for precise scanning and accurate identification of localised brain activity, which would be necessary to draw firm conclusions about the (shared) structures implicated in memory storage and recall. Nonetheless, Squire et al suggest that the episodic-semantic distinctions are useful for research purposes.

In as much as the current study is interested in an individual’s ability to recall information about specific events, it is useful to accept that episodic and semantic memory are distinct. The current study is not concerned with respondents’ interpretation of events (it does not ask what an event *means*, to the individual). Examination of an individual’s reasoning would be exploring how semantic memory is developed. However, the current study focuses on episodic memory. This is defined as an individual’s record of experiences from his/her personal life in the form of an internal autobiography. Also known as autobiographical memory, episodic memory has been described as the “highest memory system” (Tulving, 1987, cited on page 72). The current study’s interest in episodic memory is twofold. Firstly, it gives people their uniqueness by recording memories of their personal past. Secondly, episodic memories include both unique, individually identifiable events and frequently occurring events that may be more difficult to distinguish from other, similar events. Studies have shown that compared to controls, people with depression are more likely to recall generalised event memories when asked to retrieve details of a specific event (see below). The bias

towards generalised memory retrieval may be implicated in some of the problems associated with depression, for example, depressed individuals may have a reduced sense of identity if they are unable to recall specific events that demonstrate how they act in certain situations. Alternatively, they may find the identification of potential solutions to novel problems difficult if they cannot recall details of how they acted or the consequences of their actions in previous situations. The current study, therefore, is interested in episodic memory processes and aims to explore how these processes differ between people with and without depression.

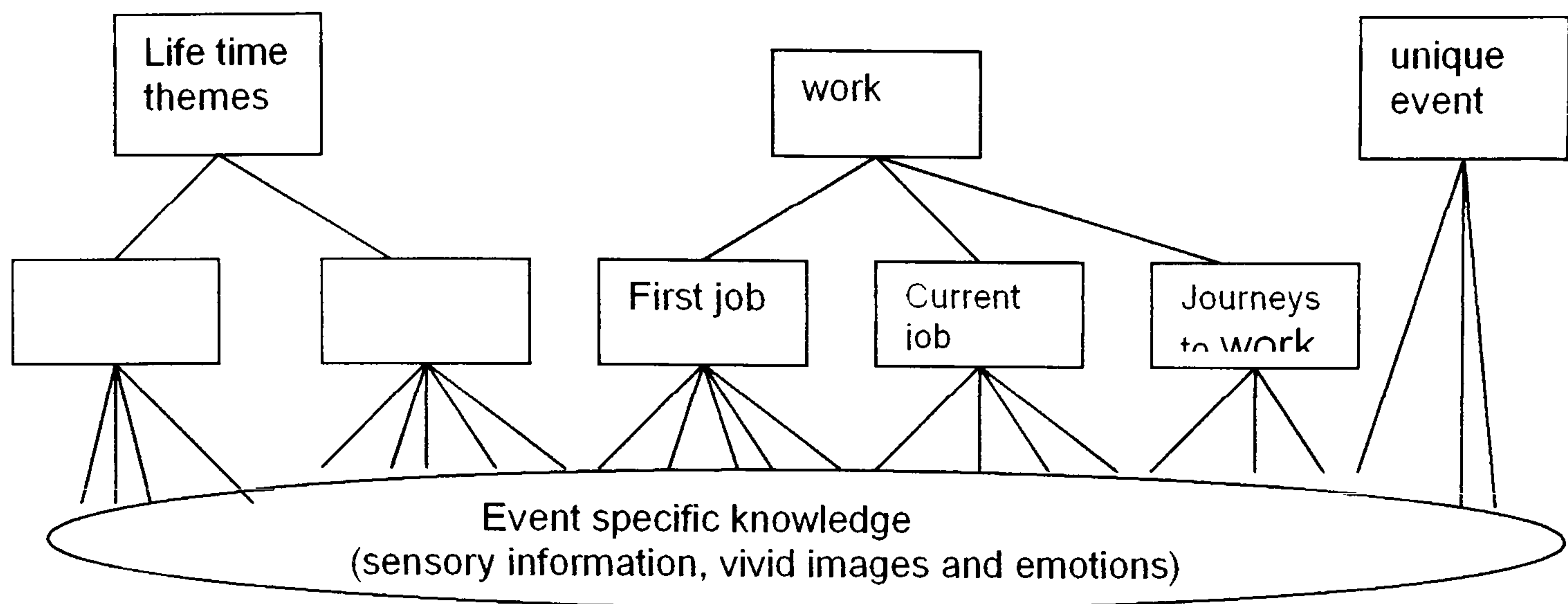
1.4.3 Processes involved in autobiographical memory

1.4.3.1 Hierarchical Storage

Autobiographical memory is arranged hierarchically within lifetime periods, for example, work and relationship themes (Conway, 1996). Lifetime periods or themes relate to the individual's goals and have a beginning, middle and end, for example, first job, current job. Figure 3 illustrates the hierarchical nature of memory storage. Each theme can relate to the same time period, but must be distinctive in some way. If an event were totally unique, this would be the bottom of the hierarchy. There are many significant events that happen in young adulthood, for example, finishing education, moving into one's own home, or meeting a partner. As a result, there is an age related curve in autobiographical memory, with more themes relating to young adulthood, than periods when there are fewer novel events occurring. Within each lifetime period, if events are repeated, or similar events are experienced, they are organised around subordinate themes, known as general events such as "journeys to work", or "meals with friends".

The next level down contains event specific knowledge, such as what one wore to work on a particular day, or data on a birthday meal in a Mexican restaurant. Conway suggests that event specific knowledge is contained in a "pool" of data rather than an organised set of information. This pool contains information from the senses, vivid images and affect, that is, the micro-details of the event. Like a book, where the book is analogous with the memory system, chapters are the lifetime themes, paragraphs are the general events and the words are the event specific knowledge.

Figure 3: The hierarchical structure of memory storage.



Williams and Scott (1988) suggest that during the storage process, identification tags are attached to the memory. These tags help distinguish one memory from other memories. The more tags there are, the more distinct the memory is.

1.4.3.2 *The nature of autobiographical memory recall*

Reiser, Black and Abelson (1985 in Williams 1996) suggest that first the hierarchical structure (or lifetime period) is identified. Then, specifying criteria that distinguish that memory from other knowledge held within that structure are used to narrow down the search. Williams (1996) suggests the search starts with a category and contextual information is added later on during the search process. According to Tulving (1987), this act of remembering is a largely pre-conscious process causing retrieval cues to be brought into contact with stored information which is then reactivated. The recalled memory is, therefore, a reconstruction. The process is described by Craik:

“If remembering is viewed as a constructive mental activity, rather similar to perceiving, then some of the puzzles may be resolved. Just as perceiving involves an interaction between incoming stimuli and stored knowledge to produce an experience of the present scene, so remembering may involve an interaction between incoming retrieval cues and rather specific knowledge stored from past experiences. But neither the stored knowledge nor the retrieval cue is “the memory” – rather, remembering is produced by their interaction” (Craik, 1994, page 257).

It may be that general recall is part of the process of accessing specific memories. Indeed, Barsalou, Lancaster, Spindler, George and Farrar (1988 in Barsalou, 1988) found that the most common type of free recall in university students was of summarised events. Only 21% of responses were specific. They

concluded that summarised events were functional in providing access to specific memories. This suggests in trying to recall an event, a search enquiry or “retrieval goal” (Williams and Dritschel, 1992) is set, such as “what did Jo wear to the party?” The lifetime theme is identified (for example a theme may relate to “leisure”) and then the generic knowledge base (for example, find “party”). Further cues are added at each subordinate level of the hierarchy to select search pathways that meet more and more of the search criteria. At each level of the hierarchy, more and more specific information is recalled, some of which fits the search enquiry: remembering the location of the party, remembering the music playing, seeing the outfit Jo was wearing. Williams and Hollan (1981) suggest that cues are evaluated to establish whether they meet the search criteria and the decision is made by the Supervisory Attention System (Shallice, 1988, in Brewer 1996) as to whether to proceed or terminate the search and start a new one.

Memory recall may, therefore, be seen as on a continuum, with summarised, general information at one end of the process and specific information at the other. Further, since events are organised hierarchically and chronologically, memory searches would result in the top part of the hierarchy being accessed (or rehearsed) more frequently than the bottom part. In this way, lifetime themes which are general in their nature, would be more readily available than the specific event details (Barsalou, 1988). As specific events are less likely to be accessed, they are less easily recalled.

1.5 Memory Specificity

Although models of memory appear logical, testing is difficult. Technology is not sufficiently developed for the objective study of the cognitive processes involved. Since autobiographical memories are the product of recollections or mental images of specific episodes (Brewer, 1996), they are subjective. It is rarely possible to establish whether events are being recalled accurately, unless extensive records such as diaries are kept prior to experimental testing. For this reason, there has been much interest in studying individuals with known problems in memory processing.

As long ago as 1883, Galton (in Baddeley, 1997) developed a way of testing autobiographical recall by asking respondents to retrieve a memory of an event in

their past in response to the presentation of an adjective or “cue word”. This remains the most common method for assessing memory recall, often frequently referred to as the Autobiographical Memory Test (Williams and Broadbent, 1986). For the purpose of this study this method will be referred to as the standard cued recall task. Cue word “valence” refers to the positive, negative or neutral connotations of the adjectives, for example trustworthy is positive, impatient is negative and silent is neutral. Research has explored how different populations respond to cue words, for example counting the number of specific and general memories elicited. Typically, a specific response is one that includes details of person, place and time. An over general memory is one that does not include such details or is an amalgamation of several events.

1.5.1 Classification of autobiographical memories

Data from research on specificity has resulted in the classification of memories as specific or general. A specific memory is one that includes contextual details (time, place, person and action). It may have more identification tags, or more unique identification tags. General memories fail to provide contextual details. This may be because they have few identification tags or fewer unique tags. General memories may be categorised as “categoric” or “extended” (Williams and Dritschel, 1992).

1.5.1.1 Extended memories

Extended memories lack temporal location, or details of the time at which the incident occurred. Generally, researchers ask respondents to provide a memory of an event of less than one day. It is acknowledged that this is an arbitrary time period. Nonetheless, extended memories are those that fall into a longer time interval than has been dictated by the task demands.

Williams (1996) has observed that extended memories appear to be older and more distinct. It is possible, therefore, that they are less specific as they have become fragmented because they have not been accessed or rehearsed as much as lifetime themes or commonly occurring event memories.

According to Brewer (1996), event memories contain data on “place, actions, person, objects, thoughts and affect” (cited on page 60). However, they do not contain information about the temporal location of the event. It is suggested that

time-related information is derived from the memory's position on the hierarchy. Thus, if a memory pathway has been less well rehearsed (in relation to other memory pathways), its relationship with other memories may be less apparent. To put it another way, it is difficult to know exactly where the memory is within the memory network and, therefore, it is difficult to know whether one event happened before or after another event.

1.5.1.2 Categorical memories

Categorical memories are those which fall within the same lifetime theme, such as "I'm always in a rush to get to work".

Williams and Dritschel (1992) suggest that the two types of over general memory appear to be functionally independent. The function of categorical encoding is to "extract routine and commonalities" (page 403). The function of extended memories is to distinguish a particular memory from all the other times that a similar event has happened.

It follows that the frequency of events results in the difference between categorical and specific memories (Nandrino et al 2002). This can be used to distinguish between categorical and specific events, that is, a categorical memory relates to repeated experiences. On the other hand, a specific memory may be distinguished from other, similar experiences by some novel or unique aspect of that experience. For example, a categorical memory may be work days, whereas a specific event might be when the fire alarm was activated and the office evacuated.

1.6 The link between memory specificity and depression

Early cued recall research studied mood congruence; for example, Lloyd and Lishman (1975, in Williams and Scott, 1988) found that, unlike in "normal recall", people with depression remember more negative than positive memories. More recently, researchers have observed an over general retrieval style in individuals with depression (Brittlebank, Scott, Williams and Ferrier, 1993), post traumatic stress disorder (McNally, Litz, Prassas, Shin and Weathers, 1994), acute stress disorder (Harvey, Bryant and Dang, 1998) and multiple personality disorder (Schacter et al 1989).

Williams and Scott (1988) used the cued recall method to compare 20 depressed adults with 20 controls matched for age and education level. They found that the depressed group produced significantly fewer specific memories. Similar observations have been made by Williams et al (1997); Moore, Watts and Williams (1988); Wessel, Meeren, Peeters, Arntz, and Merkelbach (2001); Wessel, Merckelbach and Dekkers (2002); Brittlebank et al (1993); Goddard et al (1996); Kuyken and Dalgleish (1995); Kuyken and Brewin (1995); and Arnz, Meeren and Wessel (2002).

Williams and Scott (1988) included a measure of semantic processing and measured the latency time between presentation of the cue word and recall of a memory, both of which are sensitive to psychotropic medication. As there were no significant differences between the groups on these measures, the researchers asserted that the bias towards over generality was not as a result of psychotropic medication.

Thus Memory consists of two processes: the storage and the retrieval of information. Either of these processes may be “going wrong” to produce the errors found in cued recall tasks. Over general responses may be a result of inadequate encoding during the storage process or there may be fewer cues available at the time of recall (Williams and Scott, 1988).

1.6.1 Specificity and memory style

Some research has specifically addressed whether specificity is related to a general memory ability. In tests, over general retrieval bias is not correlated with poor general memory performance. For example, as over general retrieval has been observed in people with post traumatic stress disorder, Wessel et al (2002) compared specificity in survivors of World War II with matched controls. They found that although patients demonstrated less specificity, they did not differ from controls on measures of general memory ability (immediate memory, total memory capacity and semantic retrieval). Further corroboration comes from Arnz et al (2002) whose regression analysis of data from participants with borderline personality disorder and histories of childhood trauma suggests that over generality is unlikely to be the result of a more generalised memory deficit. Thus whether individuals have “good” or “bad” memory systems does not affect whether they are biased towards a specific or over general memory recall style.

Kuyken and Dalgleish (1995) compared 33 patients in a moderate to severe major depressive episode meeting DSM III R, with 33 age and education matched controls (14 of whom had had a major depressive episode in the past). As there was no difference in specificity between controls with and without a history of depression, the authors suggest that an over general retrieval bias is state dependent. That is, just because a respondent has previously had depression (but has now recovered), they are not more likely to be over general in their recall. However, whilst an individual actually has depression, s/he will be likely to be less specific when recalling memories. Similarly, Wessel et al (2001) reviewed studies and compared currently depressed participants with controls with remitted depression. Their findings support that it is current depression (as opposed to remitted depression) that is a “strong predictor” of specificity (page 415). Over generality, therefore, appears to be related to current mood state, rather than as a result as an underlying (trait) effect of cognitive style.

In addition, since people who have recovered from a depressive episode do not show a bias towards over general retrieval, it seems unlikely that depression results in fewer identification tags being encoded during the storage of memories. It is suggested, therefore, that it is a malfunction in the retrieval process (not the storage process) that results in the production of over general memories in cued recall tasks.

1.6.2 The influence of cue valence on research findings

Some studies have found that cue word valence does not influence over generality in people with depression (Moore et al 1988; Kuyken and Dalgleish, 1995; Wessel et al, 2001; Goddard et al, 1996 in Wessel et al 2001). Other research has found more over general recall in response to positive than negative cues in depressed people (Williams and Scott, 1988); and in people who have attempted suicide (Williams and Dritschel, 1988; Williams and Broadbent, 1986). Wessel et al (2001) suggest that the influence of cue valence is, at best, an unstable phenomenon. An alternative explanation is that the finding may have been influenced by the methodological differences between in the two sets of studies (Kuyken and Dalgleish, 1995). In particular, experimenter bias may have been introduced by oral presentation of cues; for example, there may have been differences in vocal tones between positive and negative cue words.

1.6.3 The impact of negative life events

Despite the conflicting findings as to whether cue valence influences specificity, it may be suggested that people who have experienced more aversive life events have more episodic memories of unpleasant experiences in their autobiography both in terms of frequency and severity. If this were the case, it could be that there are more negative than positive events being available for retrieval (Kuyken and Brewin, 1995). Observations of over general response biases in people with post traumatic stress (for example, McNally et al 1994; McNally, Lasko, Macklin and Pitman, 1995) have added further weight to the hypothesis that there may be an over-representation of negative events stored in autobiographical memory. The frequency of negative life events may interact with cue valence to influence specificity.

It follows from this hypothesis that the speed of recall, or the latency from presentation of cue word to recall of memory, would be greater for positive than negative cues. Kuyken and Brewin (1995) found that over general memory recall was more frequent in respondents who reported a history of childhood sexual abuse and in those who were avoiding memories of childhood physical and sexual abuse. However, there was no difference in response times to negative and positive cues. It did not take them longer to recall positive than negative events. Further, abuse memories were not over-represented in events that were recalled, as one would expect if the trauma had resulted in there being more negative events stored in autobiographical memory. They therefore concluded that relationship between abuse and specificity was not straightforward.

Arnz et al (2002) argued that as there is a recognised relationship between childhood trauma and borderline personality disorder (BPD), BPD was likely to be related to specificity. The intention of their pilot study was to explore the relationship of trauma to over generality in BPD, but this relationship was not demonstrated. Similarly, anxiety disorder was not found to influence over generality. However, major depressive disorder did predict over general memory production. Whilst the small number of respondents (39) prevented conclusive remarks, they speculate that it might be that co-morbid depression was the causative factor in earlier studies that they reviewed.

Another study that failed to find support for the hypothesis that childhood abuse

and general memories are related was Orbach et al (2001). Based on developmental theories of autobiographical memory (such as, Williams and Dritschel 1992) and empirical research that has demonstrated a relationship between trauma and overgeneral memory, the study suggested that childhood abuse would disrupt the development of memory narratives and predicted that those children would demonstrate “generic-categoric” (page 1430) memory retrieval. Their results did not support this hypothesis and, again, the authors concluded that it was the reports of high levels of depression that were related to memory specificity.

Studies have produced inconsistent results regarding the relationship of cue valence and specificity. It appears that any effect that cue valence does have is not because of an interaction between the valence and an over representation of negative events in autobiographical memory. It may be that there is something else about depression that is producing the failure to recall specific memories in response to cued recall tasks.

1.6.4 Cognitive aspects of depression and their impact on memory

1.6.4.1 Over general recall as a result of emotional avoidance

Similar to recognised problems of behavioural avoidance in depression, it has been suggested that depressed individuals may avoid emotions. That is, over general responses may be a consequence of individuals trying to avoid aversive emotions. Williams (1996) suggests a chain of events in the memory recall process, which he termed “mnemonic interlock”. The individual starts with a categoric search; identifying the lifetime theme that will be explored. When this leads to an aversive memory, the search is aborted and a new categoric search is commenced. If this leads to another aversive memory, the process is stopped again and so on. As a result, categoric memories become over rehearsed and more readily available.

1.6.4.2 The role of emotions in recall

Avoidance or mnemonic interlock is consistent with theories about the activation of emotions. For example, Robinson (1996) asserted that individuals may experience spontaneous affect, cognitively generated affect and emotions as an implicit memory.

A cognitively generated affect may arise because the individual is thinking about a previously experienced event, which accesses the event specific level of the autobiographical memory hierarchy. Foa and Riggs (1993 in Foa and Hearst-Ikeda 1996) assert that conscious avoidance is a psychological process aimed at preventing the associated emotional arousal. That is, the thinking process activates connections with other event memories. Some of those connections (or associations) will be with emotional memories which are re-activated and thus re-experienced (James 1890/1918 in Christianson and Safer 1996). It may be the emotions stored at event specific level that result in a bias towards over general memories and it is the "emotional evocativeness" of a memory that relates to its specificity (Rubin, 1986).

In looking for a source of the non-specificity of autobiographical memory in their sample of survivors of World War II, Wessel et al (2002) found that intrusion and avoidance predicted non-specificity for negative but not positive cue words. It was suggested that an evaluative process occurs during encoding and results in judgements about what events say about the self. For example, if an individual encodes an event as evidence of his/her uselessness, s/he will attempt to avoid recalling details of that event because such recall will re-activate the associated unpleasant emotions, such as guilt or shame. Indeed, Ortony, Clore and Collins (1988, in Hayes, Conway and Morris, 1992) suggest that emotions are reactions to the evaluation of consequences of events, actions of agents, or aspects of objects. Although this may be a rather simplistic way of understanding the purpose and experience of emotions (Hayes et al 1992), it is consistent with the generation of emotions from processes involved in long term memory storage and retrieval. As a result, an individual may be motivated to avoid emotional memories, if those memories are negative. For example, Orbach et al (2001) suggest that their participants with a history of childhood abuse were avoiding aversive memories and, as a result, prematurely inhibiting their memory searches. They observed that the trauma group more frequently failed to produce any memory (either specific or general) and suggest this was due to attempts to avoid aversive memories that involved the self.

These studies again point to the suggestion that, if there are more negative events stored in autobiographical memory, there is a larger amount of information to be avoided. It may be that this results in a tendency to stop moving down the

hierarchical memory structure.

The same association pathway between events stored in long term memory may be activated but at a subconscious level when an implicit emotional memory is generated. Support for this theory comes from Claparede (1911/1951, in Christianson et al 1996) who observed that a densely amnesic patient refused to shake hands with the man who had previously pricked his hand, despite not recalling the man pricking his hand. It is not clear how spontaneous affect arises, for example, activation may be as a result of unconscious mechanisms (Tobias, Kihlstrom and Schacter, 1992 in Christianson et al 1996). It may be that, through the evolution of a survival mechanism such as “fight or flight”, responses are activated. In times of danger, it is necessary to “short cut” thinking processes and react quickly, so information from the senses must bypass the short term memory processing and be checked against information in the long term memory store. For example, Brewin, Dalgleish and Joseph (1996) suggest that there may be rapid, low level processing from the sense organs through subcortical pathways involving the thalamus and amygdala to facilitate the identification of potential threats. When a threat is detected, stress hormones are released that activate the sympathetic nervous system and result in fight or flight responses. Such reactions are below the level of consciousness and may not be within the individual’s intentional control. The result of this subconscious process may be to activate event specific memories, some of which may be emotional. Rumination (see below) may inhibit short cut processes.

1.6.4.3 The role of rumination in autobiographical memory

Beck (1967) described ruminations as long strings of associations. Rather like a domino-effect, it is a process where one memory leads to another. The interconnected nature of the memory network is emphasised.

Ruminative processes may act as mechanisms for avoiding emotions. Focusing on one piece of memory stops focus on other aspects of the event and hence the short cut mechanism that may generate implicit memories. In this way, rumination may prevent feelings being evoked and, as such, act as a defence mechanism (Spence, 1988). For example, by concentrating on a visual image, one may avoid a physical memory (such as the pain experienced) or an emotional memory.

In addition, in conscious processing, rumination may facilitate the active avoidance of aversive specific memories. Wessel et al (2002) suggest that the repeated retrieval of a word may reduce the retrieval of related words. They hypothesise that through rehearsal, the recall of one word becomes habitual and prevents the recall of alternative words. It may be that implicit memory processes (that lead to intrusive thoughts, through the short cut, subcortical pathways) and conscious memory processing (that activates the memory network and associated/connected memories) are both mediated by rumination. For example, Brewin hypothesises that in post traumatic stress, “flashbacks, ordinary memories and rumination provide mutual cues that trigger each other” (Brewin, 2001, cited on page 385).

1.6.4.4 Evaluation of relationship between avoidance and over generality

Most of the studies reviewed presented cue words to participants and coded their initial response as either specific or over general. However, the standard cued recall method does not allow for the study of the memory retrieval process. Indeed, Watkins and Teasdale (2001) point out that there is no accepted explanation of why over general memories are recalled. A free recall method enables the researcher to assess the “rememberers” retrieval strategies (Orbach et al 2001). Further, “think aloud” tasks have shown that the retrieval cycle includes information from lifetime periods, general events and event specific knowledge (Williams and Hollan, 1981). Since general memories may be part of the retrieval process (Barsalou et al, 1988, in Barsalou, 1988), this method may demonstrate how a memory links with other memories. Examination of this retrieval process may show how individuals move from one memory to the next during the search for a specific memory. It may illustrate sideways moves across the hierarchy despite task demands that require moves down the hierarchy. Research to date has failed to explore such relationships between memories (Barnhofer, de Jong-Meyer, Kleinpaß and Nikesch, 2002). It is predicted, therefore, that this method will show the individual moving between “clusters” (Barsalou, 1988) of memories, aborting and re-starting searches. These searches will be at the categoric level and the abortion of searches will result in a failure to move down the hierarchical structure to event specific memories.

1.6.4.5 Free recall as a method for observing memory retrieval

Pennebaker, Czajka, Cropanzano and Richards (1990) were interested in the parameters of levels of thinking which they asserted were on a continuum. At one

end of the continuum were the conceptually or temporally narrow thoughts. These are consistent with specific memories, for example, “it was wet”, “I ate chicken” or “the trousers were blue”. The other end related to a broader, higher level of thinking which involved self-reflection and emotional awareness. Since self-reflection and emotional awareness involve evaluative processes, they may be considered to be at a different level to the descriptive, specific memories.

Pennebaker et al’s analysis demonstrated that this was an appropriate method for measuring levels of thinking, that is, it could be used to look at which level of hierarchy is being accessed. Barnhofer et al (2002) developed the technique in order to study mnemonic interlock and compare depressed participants with non-depressed controls. They hypothesised that an initial categoric memory would result in more of the subsequent retrievals being categoric too, that is, there would be a movement across the hierarchy. Further, they predicted that there would be no such group difference if the first memory recalled was specific.

The depressed group produced less specific and more categoric memories despite the methodology allowing respondents more time to retrieve a memory than in traditional cued-recall tasks. That is, the result was not because depressed individuals were slower at memory processing or searching. Their findings were broadly consistent with a mnemonic interlock hypothesis; people were moving from one category to another, rather than down the hierarchy from category to specific memories. The study demonstrated that this was a useful method for exploring memory retrieval. However, it remains unclear whether the over general memories are as a result of avoidance and/or rumination. Alternatively, it might be that, as the production of an over general memory constitutes a failure to meet the task demands, the individual tries a further search in an effort to achieve the task. Since categoric searches are involved in the process of searching for a specific memory (even in people without a psychological problem), it is suggested that further exploration of the retrieval process is warranted. It is not clear why people with depression produce more over general responses to recall tasks.

1.6.5 Rationale for the current study

Autobiographical memory is stored within a hierarchical structure (Conway, 1996). People with depression have been shown to have difficulty with the retrieval of

specific, contextual information held within the autobiographical system.

Observation of their responses, and comparison with non-depressed controls may broaden theoretical explanations of the retrieval process. Such understanding can add to knowledge about the impact of such a deficit on the individual. In addition, the results may clarify how best to intervene therapeutically to reduce, or to resolve, the deficit.

The literature review suggests several predictions that can be made regarding the types of errors that will be made on a standard cued recall task by people with depression. In particular, their responses are likely to produce thematic categoric memories, that relate to repeated experiences and memories that relate to periods of longer than one day (extended memories).

Demonstrating that this bias towards over generality is observed in this sample of people with depression will also confirm that they are representative of other studies of this clinical population. However, data from a standard recall task does not illustrate how the digression from successful retrieval of a specific memory occurs. The free recall method has been shown to be appropriate for exploration of the retrieval process. Participants' transcripts of the free recall task will be divided into memory units. Each unit will be rated as specific, extended or categoric. Each memory unit will be paired with the following unit, for example, specific-specific, specific-extended, or specific-categoric. Based on the literature, it is predicted that this method will demonstrate how people with depression will move horizontally across the memory hierarchy, thereby producing strings of general memories. They will produce more categoric-categoric, categoric-extended, extended-categoric and extended-extended pairs. By comparison, non-depressed controls are expected to move vertically down the hierarchy and retrieve specific memories, which contain contextual information. They will produce more pairs containing a specific unit.

1.6.5.1 Originality of the study

The current study originates from a review of quantitative studies of memory specificity and depression that have used the standard recall methodology. However, the standard task does not allow for the observation of memory retrieval processes. Whilst Barnhofer et al (2002) used a qualitative (free recall) method, they did not demonstrate that their sample were representative of the population

used in earlier quantitative studies. The current study incorporates both methods, thus bridging the gap between the two methodologies. In addition, the Barnhofer et al study (2002) was carried out using German speaking participants. There may be cultural differences (such as socio-linguistic disparities) between their population and the English speaking participants of other studies. The current study recruited participants who spoke English as their first language.

The extent and nature of analysis in the current study also differentiates it from that of Barnhofer et al (2002). Firstly, Barnhofer et al (2002) do not reveal how they analysed their data. The current study provides extensive details and explanation of the methodology used, making examination and replication more straight forward. Secondly, whilst Barnhofer et al (2002) provided a new methodology for the study of retrieval processes, they examined their data purely in relation to mnemonic interlock. Therefore, they only carried out analysis on responses from participants who had produced both an initial specific and an initial categoric reply, and they only looked at general-general and specific-specific pairs. The current study makes predictions that are consistent with predictions that may be made following a mnemonic interlock explanation. However, the analysis will not be restricted by this explanation. Rather, the analysis will be more exploratory since it will observe the retrieval processes of all participants. In addition, it will examine the whole retrieval process by including cross group pairs (general-specific and specific-general pairs).

1.7 Hypotheses

On the basis of previous research using the standard cued recall task, it is predicted that people with depression will produce more over general memories than non-depressed controls. The memories the depressed group produce will not include specific contextual details, such as the place or people involved in the event. The specific hypothesis related to the research question is:

1. People with depression will produce more general memories than non-depressed controls on a standard cued recall task.

The review suggests that the tendency for people with depression to produce categoric memories arises because respondents are avoiding emotional memories stored at the bottom of the hierarchy. It follows, therefore, that the frequency of

categoric memories will exceed that of specific memories. Categoric memories will relate to general themes or amalgamations of several events. In addition, it is theorised that extended memories are those that have become fragmented (Williams, 1996). This fragmentation occurs because extended memories are less well rehearsed. This suggests that movement around this part of the hierarchy will be more problematic. This implies, therefore, that access to the specific contextual details of the memory may be less accessible. As a result, it is suggested that extended memories too will be more frequently recalled by the depressed group than the comparison group. Extended memories are of events that last longer than one day. The explicit hypothesis in relation to the research question is:

2. The depressed group will produce more categoric and extended memories than non-depressed controls on a standard cued recall task.

Hypotheses 1 and 2 predict over general recall in depressed participants. However, standard cued recall tasks do not illustrate the process of memory retrieval. In order to observe the retrieval process, a cued free recall task is required. The second part of the study, therefore, presents participants with a think aloud cued recall task. It is predicted that, as with a standard cued recall task, depressed participants will produce fewer specific memories than non-depressed controls. In addition, participants' responses to this task will offer opportunity to explore whether participants move across the hierarchy (from category to category), rather than down the hierarchy (from category to specific memories). The specific hypotheses are:

3. People with depression will produce more general memories than non-depressed controls on a free recall cued task.

4. People with depression will produce more category-category and extended-extended pairs than non-depressed controls on a free recall cued task.

METHOD

2.1 Design

An observational study comparing the performance on two memory tasks between a clinical (depressed) group and a comparison group. The depressed group comprised service users within the Trust with a diagnosis of depression. Controls were non-depressed members of staff within the Trust.

2.2 Recruitment

2.2.1 Depressed group

The researcher approached clinicians working within 3 community mental health teams in the Trust. Clinicians were asked to identify service users on their case load who had a primary diagnosis of unipolar depression, who may be eligible for participation. Those service users were aged 18 to 70 years and spoke English as their first language.

Clinicians were asked to exclude individuals who were known to use illicit drugs or consume alcohol over the BMA advised limits, as these substances could impact on the individuals' memory functioning (Bilder et al., 2000; Meek, Clark and Solana, 1989; Morgan, 1999). In addition, clinicians were asked to exclude service users with diagnoses of dementia or post traumatic stress disorder, or if there was a known history of head injury. Again, these diagnoses have a recognised impact on memory functioning. (See appendix 1 for clinician information letter).

Service users who met the criteria for participation were given a patient information sheet and consent form (see appendices 2 & 3). Those patients interested in participating returned their completed consent form to the researcher in a pre-paid envelope.

47 patient information sheets were given to clinicians working within the Trust. 17 service users returned consent forms, and one service user responded by email confirming she would be prepared to participate. Thus the response rate was 38%.

2.2.2 Comparison group

15 staff controls were selected using opportunity sampling. The researcher recruited staff members from the Trust. Difficulties were encountered in planning the current study and recruiting service users (see critical review, Akande 2004). Additional time constraints resulted in pressure to recruit the control group quickly. As a result, opportunity sampling was used. Secretarial, Nursing and Psychology colleagues were approached in person and asked to consider participation. Those who were interested were given a letter with details about the research and a consent form.

2.3 Ethical Considerations

2.3.1 Approval

Ethical approval was granted by North and Mid Essex Local Research Ethics Committee. Research and Development (R & D) approval was provided by North Essex Mental Health Partnership NHS Trust.

Approval was granted following completion of statutory documentation. This documentation was considered by the ethics and R & D panels. Both granted approval for the study (see appendices 5 & 6).

2.3.2 Considerations

All participants completed consent forms. Service users who decided to participate returned their consent form to the researcher in a pre-paid envelope. Staff who agreed to participate completed their consent form during the meeting. See appendices 3 & 4 for consent forms.

All participants received a written information sheet about the research. Service users were given an information sheet by a member of their care team (appendix 2). Staff were given an information sheet by the researcher (appendix 1).

The information sheets emphasised confidentiality and the right of the participant to withdraw at any time. For service users, it was emphasised that withdrawal from the study would not effect their care. The letter also offered the opportunity to receive a copy of the results.

The information sheets explained that questionnaires would be assigned a code number and that any documents with identifying information would be kept in a locked cabinet. Only the researcher would have access to the identifying information. No participant identifying information was entered onto a computer. Data that were held on the computer were covered under the Data Protection Act (1998) and required a password to access.

A contact name, address, telephone number and email address for the researcher was provided for participants who wished to discuss any aspect of the research, or request further information. No-one requested further information.

2.4 Participants

A total of 15 service users and 15 staff members participated in the study. The response rate (38% for the depressed group) is discussed in more detail in the critical review (Akande, 2004).

15 participants were recruited to each group. This was a replication of earlier studies that had used similar numbers of participants. The sample size was large enough to detect a large effect size, Cohen's $d = 0.95$ with a power of 0.80 at an alpha level of 5% (one-tailed).

2.5 Procedure

Staff members who agreed to participate were visited in their place of work and complete the consent form, screening and experimental measures in one visit. As described in the recruitment procedure section, service users were given a participant information sheet and, if interested in participation, they returned their consent form to the researcher. Appointments were made with the first 15 service users who returned a consent form. 3 participants opted to attend a community office, the remainder were seen at home.

All respondents who completed the screening stage were invited to participate in the experimental stage. All agreed to continue. With the exception of 1 participant, all preferred to complete both the screening and experimental stages in one visit. Two home visits were made to the remaining participant: one to

complete the BDI and screening questionnaire, the other to complete the memory tasks. Interviews lasted up to 90 minutes.

2.6 Measures

2.6.1 Screening questionnaire

In order to protect participant's confidentiality, each questionnaire was allocated a unique project identification number. (See appendix 7). This was the only place where participant's personal details were recorded.

The questionnaire was designed specifically for this study. It collected demographic data. Service users also provided details of their contacts within the Trust. The remainder of the questionnaire related to inclusion and exclusion criteria and covered the following areas:

- Use of non-prescribed drugs and amount of alcohol consumed in a week.
- Other mental health problems (excluding depression).
- History of head injury
- Dementia
- English as a first language

2.6.2 Beck Depression Inventory

Participants completed the Beck Depression Inventory (Beck, 1967). This measure is widely used within mental health services and psychotherapy research (for example, Watkins et al 2001; Lavender and Watkins, 2004). It is quick to administer and provides a self-reported measure of cognitive, behavioural and emotional components of depression.

The inventory is a 21 item self-rating measure with good psychometric properties (Beck, Steer and Garbin, 1988, in Watkins et al 2001). It assesses behavioural, cognitive, motivational and emotional factors to provide an indication of the severity of depression. Written instructions are printed at the top of the questionnaire. These were read to participants, who were asked to rate their mood on a 4 point scale. The BDI has no time limits and takes approximately 5 minutes to complete. Responses to each item are added together to provide an overall score. Scoring was as follows:

<u>Score</u>	<u>Classification</u>
0 – 13	Minimal depression
14 – 19	Mild depression
20 – 28	Moderate depression
29 – 63	Severe depression

2.6.3 Memory tasks

Two cued recall tasks used in earlier studies were replicated: a standard cued recall task, and a free recall task.

2.6.3.1 Standard cued recall task

The cued recall method was replicated (for example, McNally et al., 1995). Participants were asked to remember a specific event when they had shown a personal characteristic or “trait”. They were given examples of specific and general memories and the differences between the two were explained. (See appendix for verbatim instructions 8). Once participants understood the instructions, they practiced the task with 4 words: persistent, cautious, proud, thrifty. During the practice phase, participants were not timed or recorded and were given prompts if necessary.

The 20 experimental traits, or “cue words” were friendly, lazy, loyal, distrustful, happy, hostile, open-minded, selfish, honest, ashamed, intelligent, guilty, self-disciplined, cowardly, helpful, jealous, kind, rude, humorous, cruel.

All practice and experimental cue words were printed in capitals on individual cards. A quasi-random order of presentation was used: the 10 positive words were shuffled, and the 10 negative words were shuffled. Positive and negative words were presented alternately.

In the experimental phase, timing started as soon as the experimenter had said the word and stopped once a specific memory had been recalled. If a general memory was recalled, the participant was prompted to recall a specific memory by asking “can you give a specific date for that?”. Williams and Scott (1988) suggest that previous research has shown respondents ability to provide a date provides a reliable method of rating memories as general or specific (inter-rater reliabilities between 0.87 and 0.93). After 60 seconds, the next cue word was presented,

irrespective of whether the participant had produced a specific memory or not. All responses were recorded and transcribed verbatim.

2.6.3.2 Free recall task

It was suggested in section 1.6.5 that the retrieval process cannot be observed using the standard cued recall. However, free recall tasks provide data that illustrates the processes involved. Barnhofer et al's (2002) think aloud task was replicated. These were provided in a personal communication from the first author, T. Barnhofer. See appendix 9 for verbatim instructions.

Participants were asked to remember a specific event when they had shown a personal characteristic or "trait". They were asked to report all images, dialogues, thoughts, sensations and feelings that came to mind during the process of remembering an autobiographical event in as much detail and as vividly as possible. This part of the study was interested in the process of reaching a specific memory, as opposed to merely demonstrating a bias towards over-generality. As a result, the words were presented in a sentence ("recall a specific time when you were _____" + cue words).

Participants practiced the task on one negative (angry) and one positive (amused) cue word. During the practice phase, participants were not timed or recorded and were given prompts if necessary. Once familiar with the requirements, test items were presented.

The cue words were printed in capitals on individual cards. A quasi-random order of presentation was used: the positive words and negative words were presented alternately.

There were 4 experimental words: sad, glad, lonely, safe. In the experimental phase, responses over a 2 minute period were recorded for each cue word. Responses were transcribed verbatim.

2.7 Coding of responses and generation of variables

The experimental data were transcribed and coded.

2.7.1 Standard recall task

Responses to each cue word were rated in terms of specificity. Initially only data produced before the 60 seconds were coded. The coding frame was as follows:

2.7.1.1 Specific memories

Specific responses were memories that included details of an event or action that lasted no longer than a day. Typically they provided details of a person and/or a place. Examples of specific responses included:

jealous – “I was jealous on Saturday when I phoned up my other half who was in the pub and I was worried that he’d meet other women” (participant 28)

hostile – “last Friday to somebody who tried to talk to me in the bus stop” (participant 9).

It was not always clear whether the memory lasted longer than a day. In those instances, replies to the prompt “can you give a specific date for that?” were used to clarify the categorisation. Some of these responses were produced after the 60 seconds. Participant 13’s response to the cue word cruel illustrates this:

Participant “mmm ... gosh ... last time I was cruel ... I had some very cruel thoughts towards the um ... terrorists and my response when all that started was to bomb Chechnya. I’m not sure if that’s cruel or just outrageous, but ...”

Researcher “ok and can you give a date for that?”

Participant “Friday, because I actually mentioned it in the <name> meeting that I was at and it all went rather quiet”

2.7.1.2 Extended memories

Extended responses were those that lasted for longer than a day. Typically they provided details of a person and/or a place. Examples of extended responses are:

cruel – “summer 2004 killing flies in my house. There were too many to cope with this year” (participant 14).

self-disciplined – “I know when I was, I’m just trying to think when it was. When I didn’t cut myself at the weekend” (participant 30).

Where data in response to the date prompt indicated that the event lasted longer than one day, the response was rated as extended. For example, participant 20’s

response to self-disciplined illustrates that “sorting” her studies lasted for a month:

Participant “That would be when I was at university in my first year of doing introduction to <subject>. I was self-disciplined because I had to get it all sorted”

Researcher “Can you give a specific date for that?”

Participant “that would be June 95”

2.7.1.3 *Categoric memories*

Categoric responses were memories that did not include details of the place or person or were amalgamations of several events. For example:

loyal – “I’ve been married 24 years tomorrow, so I feel very loyal” (participant 29).

helpful – “I was helpful it was part of my job. I get great enjoyment out of helping people so I try to be helpful most days. Especially helpful towards people who are less better off than myself that need help with benefits or things like that. So most days I hope that I am helpful in someway to someone” (participant 29).

2.7.1.4 *Missing responses*

Responses that could not be classified according to the above categories were rated as “missing”. These included:

- Occasions where the respondent did not say anything during the 60 seconds.
- Where the participant stated that nothing could be recalled. For example:
open-minded – “mmm I can’t answer that one, not specifically ... nope ...” (participant 14).
- Where the participant stated that the trait did not apply to them. For example:
rude – “I try never to be rude. I’m intentionally never rude. Sorry ...” (participant 29).
- Ambiguous responses. For example:
rude – “rude. When I was rude... I’ve never knowingly or intentionally been rude for ... since I was a ... child probably. I don’t know ... no ...” (participant 1).

- Where the trait applied to someone else. Since the task instructions stated the memory should be of a time when *the respondent* has displayed or exhibited the trait in question. For example:

helpful – “I think you’re being very helpful describing all the way I have to do this test” (participant 24).

humorous – “humorous um well I enjoyed watching <programme> the other night. Does that count? I don’t know what night it’s on, it’s a Monday mainly ... think it was humorous” (participant 21).

2.7.2 Free recall task

To illustrate the data collected in this task, 2 examples are provided in appendix 10. The transcripts included were chosen as they were the first collected for each group, that is, the first participant in the depressed group and the first control participant.

2.7.2.1 Dividing transcript into individual memory units

The narrative was divided into memory units. Memories were classed as distinct when the respondent started talking about a different situation or a different class of situation. For example, where the respondent moved from describing an action to describing feelings. The different classes were

- emotions
- physical sensations (tasting, feeling, hearing, seeing)
- actions, plus an object (e.g. thinking + X, remembering + Y)
- objects, plus descriptors (e.g. Jake was tall, town was busy)
- reference to time periods

Partially started units that were not completed because the respondent was out of time (that is, they were completed after 120 seconds) were not included. This was because during coding the position of a unit marker depended on what was reported next. That is, the decision as to whether the respondent was talking about a new topic or not was influenced by the content of the subsequent memory unit. The identification of memory units is illustrated with a section of participant 10’s response to the cue word safe:

Participant 10: section of response to cue word “safe”.

“... his logistics were good | that I felt emotionally very safe | as though there was nothing I had to bother about | except getting on with dealing with the physical duress of the situation | so the sense of focus | and the sense of” [out of time].

The above section illustrates that unit markers (|) were added when the participant changed subject: from describing him, to feeling emotionally safe, to physical feeling. The last unit (“and the sense of ...”) cannot be coded as there is insufficient information to classify it.

2.7.2.2 *Specific memories*

Any unit that contained a subject, verb or object together with a description (such as an adjective) were classed as specific. Specific responses included:

- Talking about experiencing an emotions. For example “[I] felt very guilty the day I remembered” (participant 24).
- Physical sensations (tasting, feeling, hearing and seeing), where an object or an adjective was included. For example “hearing the sound of the reporter’s voice” (participant 11) and “a joyous holiday feeling” (participant 10).
- Actions (or verbs), such as thinking or remembering, together with an object. For example, “I remember sort of taking it apart” and “sanding it down with a wire brush” (participant 3).
- Objects (or nouns), plus a description. For example, “it had gone all rusty” (participant 3).

2.7.2.3 *Task related utterances*

Non autobiographical units that related to the experiment were coded as “task-related”. An example of a task-related unit was “when was I safe?” (participant 19). Participant 20’s response to the cue word “glad” illustrates this further:

Participant 20: response to cue word “glad”

“... can’t think of anything. No my mind’s gone blank. Can’t think of a word or anything at all. Um. Don’t know what I can do now.... I just can’t think of anything.... I can hear the clock ticking, um very loudly, but I just can’t think of er, anything.... A time when I was glad and I’m thinking glad about what? Glad about who? Glad about um.... And every opportunity I seem to come across a brick wall, I’m like no notno ... when was the last time I was glad? I can’t even recall the last time when I was glad, let alone a specific

time um very unusual word to use um I'm thinking that if glad had an e on the end of it, it would be glade. I can probably think of a time when I was glade”

The end of the above example illustrates some of the difficulties encountered with coding the transcripts. The research was exclusively interested in autobiographical memories. The coding frame was developed to rate the types of autobiographical memories that could be expected given the literature review. As a result, the participant's comments about the use of the word “glad” and its similarity to the word “glade” were not classifiable. Any remarks in transcripts that related to task demands, rather than to autobiographical memories were not included in the quantitative analysis. However, since they related to memory processes and illustrated theoretical concepts, they were used in the qualitative analysis.

2.7.2.4 General memories

Initially a coding frame was developed that would include the classification of categoric and extended memories. It was intended that memories that related to a period of more than one day would be rated as extended. Those memories that represented an amalgamation of several events (such as journeys to work) or that did not include a descriptor would be rated as categoric.

It was not possible to distinguish between extended and categoric responses. In the standard cued recall task participants were asked to give a specific date for the memory that they had retrieved. Such an enquiry in the free recall task would have interrupted the retrieval process and directed participants' search for a memory. As a result, the temporal location of each recalled memory was not always provided. Further, during coding, it was not always possible to establish whether the memory retrieved related to a period of longer than a day (such as a weekend) or to frequently occurring events, that is, a theme. Participant 1's response to the cue word “lonely” illustrates the difficulty in coding responses as either categoric or extended:

Participant 1 response to cue word “lonely”

“specifically when I was very, very depressed. I can't remember the dates but er I felt very lonely then. Um, although I knew there were people who were willing to help and er um probably could help me, it didn't take away the feeling of, of loneliness. Um, um, I don't get, I don't get lonely when I'm working by myself and when I'm feeling,

feeling well and good. I don't er, I don't feel lonely um normally. I remember being lonely at school when I went away to school. I felt very lonely at the age of 10"

One could speculate that the respondent produced a categoric memory relating to a general theme of feeling lonely. There have been many days when he was very depressed, and on those days, he also felt lonely. However, the temporal location "when I was very, very depressed" could also suggest that the memory related to a single period in his life, but that period lasted for longer than one day. If he had only experienced one episode of severe depression, then this would be an "extended" memory. The same difficulty was encountered in the coding of other transcripts. As a result, the distinction between categoric and extended memories was not made. Instead, the codes "general" and "specific" were used. A section from participant 3's response to the cue word "sad" illustrates the coding process. The numeric subscripts in the transcript are described below:

Participant 3: section of response to cue word "sad"

".... ₁ I was sort of pretty much sort of like empty and useless for like weeks and weeks | ₂ and I remember sort of how doing sort of stupid menial tasks just to take my mind off it | ₃ it's a weird thing you do when you're a kid isn't it | ₄ because you're usually out playing or just bugging about | ₅ I specifically remember um I took the roof rack off my dad's car | ₆ because it had gone all rusty | ₇ and I remember sort of taking it apart | ₈ and sort of sanding it down with a wire brush | ₉ and sort of painting it with Hammerite | ₁₀ and it's just one of those sort of stupid tasks that it's just to keep my mind occupied"

Using the above coding principles, it can be seen that there were 10 memory units. 5 were specific (sections 5, 6, 7, 8, and 9) and 5 were general (sections 1, 2, 3, 4 and 10).

2.7.3 Analysis

The coded data were analysed using the Statistical Packages for Social Sciences (SPSS) for Windows, version 9.

2.7.3.1 Analysis for standard recall task

The proportion of total memories that were specific, extended, categoric and missing were calculated. The rate of over-general memory production between the groups (depressed and controls) was compared and statistical analysis was

carried out to investigate whether there was a difference between the rates of retrieval of different types of memories.

The function of parametric and non-parametric tests are the same, although the former are argued to be more powerful (Greene and D'Oliveira, 1993). This means that they are more sensitive to differences between groups, they provide a more accurate measurement of those differences and they are more robust (or able to withstand some violation of the assumptions for their use). However, parametric tests require certain criteria to be met before they can be used. Preliminary analysis of the data considered whether the requirements for parametric tests were achieved as follows. Firstly, the data collected were on an interval scale. Prior to each statistical analysis, the distribution of data was examined. Normality was assessed in a number of different ways (including skewness, kurtosis and as the sample size for each group was less than 50, Shapiro-Wilks statistics). In order to represent this part of the preliminary analysis, boxplots and Shapiro-Wilks statistics are included in the results section. If the significance level is greater than 0.05 on the Shapiro-Wilks statistic, then normality is assumed. Where the data were not normally distributed, a Mann Whitney U-test was carried out. If the data were normally distributed, an independent t-test was carried out. SPSS uses the Levene's test for equality of variance, the third assumption for using parametric tests. The appropriate probability value was used according to whether Levene's test was not significant (homogeneity of variance was assumed) or significant (inequality of variance).

2.7.3.2 Analysis for free recall task

The rate of general and specific memories was calculated. The rate of over-general memory production between the groups (depressed and controls) was compared. The frequency of each type of memory was counted. Statistical analysis established whether there was a difference between the rates of retrieval of general and specific memory units. Again, preliminary analysis established whether a Mann-Whitney U-test or a t-test was appropriate..

The relationship of memories with those produced directly before and after them was established. This analysis explored the sequence of memories by counting the number of pairs where a general memory was followed by another general memory (general-general). This was presented as a proportion of the total

number of pairs. In addition, differences between the groups in the number of general memories followed by a specific memory (general-specific pairs), specific-general and specific-specific pairs were explored. T-tests were performed to establish whether there was a statistical difference in the rate of pair types.

Qualitative analyses were carried out to investigate the merit of the think aloud task in exploring memory retrieval processes. The small sample size meant that the researcher was often able to remember examples of themes that were given during the data collection stage (such as recalling that a particular respondent made reference to the search enquiry s/he was using). These, together with clear examples that became apparent during the coding phase, are used to illustrate examples of those themes. Subsequently, each transcript was assessed according to each theme to ensure that the examples chosen were representative of the whole data set.

RESULTS

3.1 Overview

The results are reported in 3 sections, starting with initial considerations of the data. Then the main findings are reported with reference to the hypotheses and exploratory research questions. The data from the two tasks are detailed in separate sections. Section 2 describes the differences between the groups on the standard recall task. Section 3 describes differences between the groups on the free recall task. The chapter finishes with a summary of the findings.

3.2 Initial considerations of the data

3.2.1 Generation of data sets

30 people (15 depressed, 15 controls) completed the screening and experimental phases of the study. The recording of some responses to the standard recall task were inaudible for one of the control group. This prevented full transcription of his responses. However, as responses were coded during the experimental phase, these codes were used for analysis. There were, therefore, 30 full data sets available for analysis of the standard cued recall task.

One of the depressed participants completed part 1 of the study only, that is, he did not wish to continue with the free recall task. In addition, the sound quality of the recording of one other depressed participant's think aloud task was so poor that full transcription of his responses was not possible. There were, therefore, 13 data sets for the depressed group and 15 for the control group.

3.2.2 Descriptive statistics of sample

As expected, the mean BDI score in the depressed group was significantly higher than the comparison group ($t = 7.36$, $df = 28$, $p < 0.05$). The mean score for the depressed group was within the severe range (mean = 28.73). The mean score for the control group was within the minimal range (mean = 2.87). Statistical analysis showed that the sample were not matched for age. The depressed group were significantly older than the comparison group ($t = 3.35$, $df = 28$, $p < 0.05$). Summary statistics for the sample are provided in table 1.

Table 1: Summary statistics for the sample.

VARIABLE	DEPRESSED (n = 15)	CONTROLS (n = 15)	STATISTIC
Gender			
Male	6 (40%)	5 (33%)	$\chi^2 = 0.14$ *** ††
Female	9 (60%)	10 (67%)	
Age			
Mean	48.33	34.40	$t = 3.35$ ** †
SD	13.31	9.01	
Living with partner			
Yes	8 (53%)	7 (47%)	$\chi^2 = 2.30$ *** ††
No	7 (47%)	8 (53%)	
BDI			
Mean	28.73	2.87	$t = 7.36$ ** †
SD	13.40	2.45	

* $p < 0.01$

** $p < 0.05$

*** $p > 0.05$

† df = 28

†† df = 1

There was no significant difference between the observed and expected frequency of males and females in the depressed and comparison group ($\chi^2 = 0.14$, $df = 1$, $p = 0.70$). The depressed group comprised 40% males and 60% females. The comparison group comprised 33% males and 67% females. Similarly, there was no significant difference between the groups for living with a partner ($\chi^2 = 2.30$, $df = 1$, $p = 0.13$). 53% of the depressed group and 47% of the control group lived with their partners.

Analysis failed to show any significant difference between the two groups in terms of their occupation. This is shown in table 2.

Table 2: Frequency of each occupation type by group.

OCCUPATION	DEPRESSED (<i>n</i> = 15)	CONTROLS (<i>n</i> = 15)	TOTAL
Clerical	5	1	6
Management	1	0	1
Maintenance	1	0	1
Academic	0	6	6
Professional	3	2	5
Self-employed	1	0	1
Medical	0	5	5
Skilled	1	1	2
Unemployed	1	0	1
Total	13	15	28

3.3 Standard recall task

2 predictions were made:

People with depression would produce more general memories than non-depressed controls (hypothesis 1). The depressed group would produce more categoric and extended memories than the comparison group (hypothesis 2).

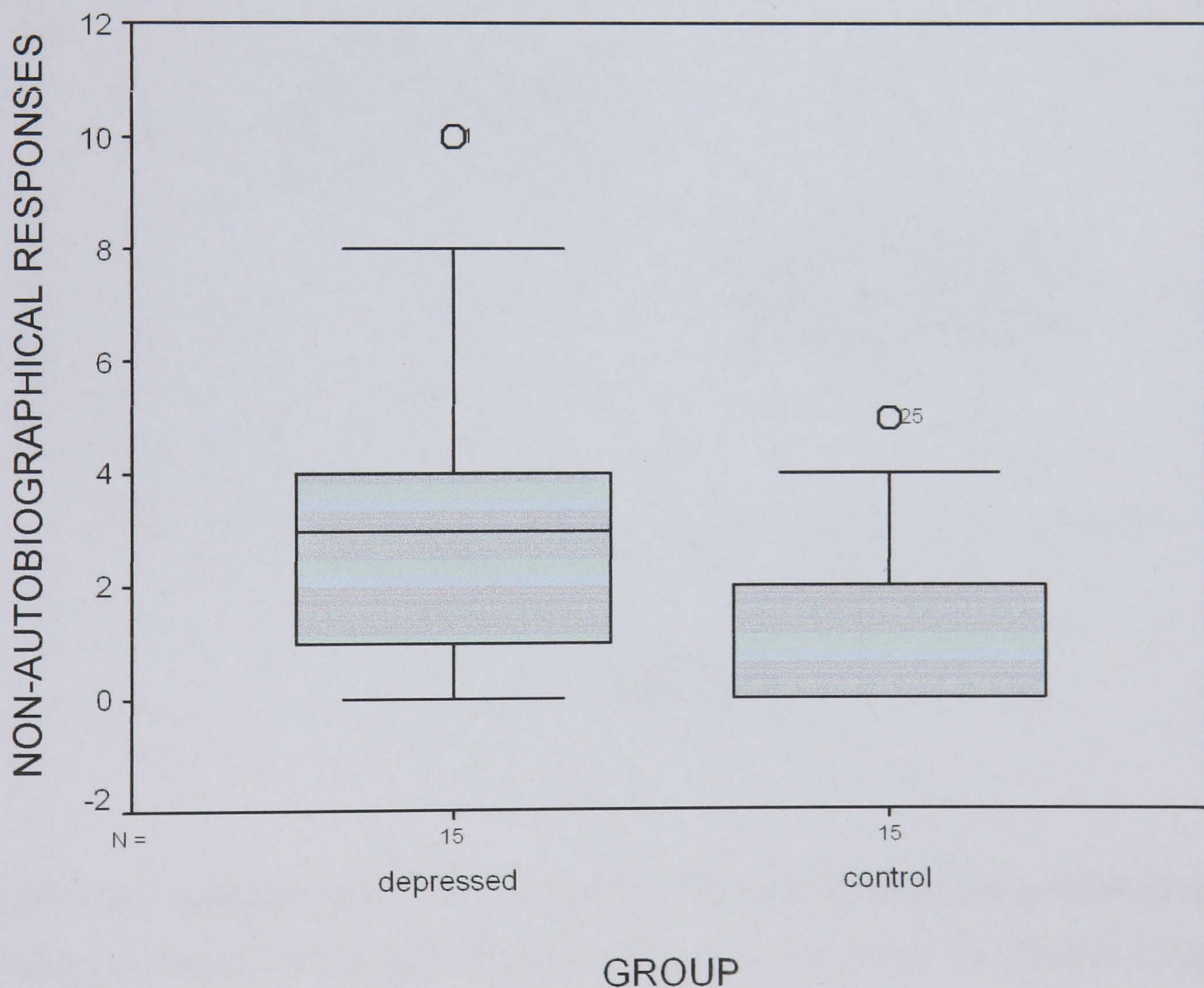
Full details of the coding process were provided in 2.7.1 in the method. In summary, participants' responses to the 20 cue words were coded as follows

- "specific" if they included details of the event that lasted no longer than one day.
- "extended" if they included details of an event that lasted longer than one day
- "categoric" if they related to general theme, or were an amalgamation of several events
- "missing" if the respondent did not recall an event, or recalled an event that related to a trait in another person

3.3.1 Productivity of the groups

The productivity of each group was explored. This was done by calculating the frequency of responses that were not autobiographical (the “missing” category). This is presented in figure 4, below. It can be seen that the frequency of non-autobiographical responses was not normally distributed (depressed Shapiro-Wilks = 0.87, $df = 37$, $p = 0.01$; control Shapiro-Wilks = 0.77, $df = 22$, $p = 0.01$). Therefore, a Mann-Whitney U-test was performed. This showed that the mean for non-autobiographical responses was 18.7 in the depressed group and 12.3 for the control group. This was a significant difference ($U = 64.5$, $p = 0.04$). The depressed group produced more non-autobiographical responses than the comparison group.

Figure 4: Productivity between groups on the standard recall task.



3.3.2 Rate of general responses between groups

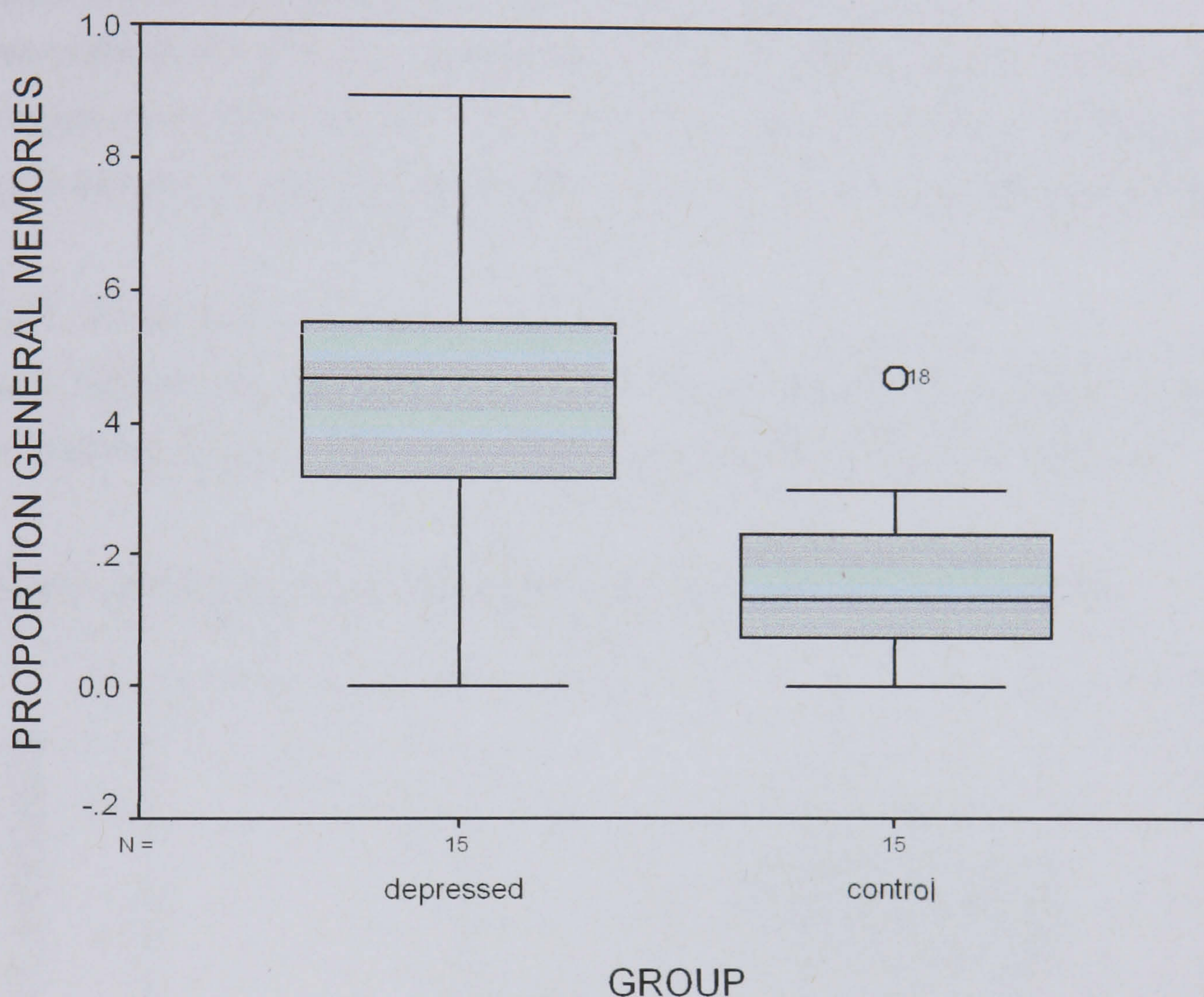
The rate of general responses was calculated by adding the number of categoric and extended memories produced by each participant. The difference in productivity rates was taken into account. The rate of non-autobiographical could act as a confounding variable, therefore, the proportion of general responses was calculated. This was done by dividing the number of general responses by the

total number of autobiographical memories produced by that respondent. That is:

$$\frac{\text{extended + categoric}}{\text{specific + extended + categoric}}$$

The results are presented in figure 5, below.

Figure 5: Distribution of general memories between groups on the standard recall task.



The box plot suggested that the proportion of general responses were evenly distributed (depressed Shapiro-Wilks = 0.96, $df = 37$, $p = 0.40$; control Shapiro-Wilks = 0.93, $df = 22$, $p = 0.10$). Therefore, a t -test was carried out. As shown in table 3, 45% of the depressed group's responses were general, compared to 16% in the control group. The depressed group produced more general responses than the comparison group. This was a significant difference ($t = 4.01$, $df = 28$, $p < 0.01$).

Table 3: Proportion of general responses, between groups on the standard recall task.

	DEPRESSED (n = 15)	CONTROLS (n = 15)	STATISTIC
Mean	0.45	0.16	$t = 4.01$
SD	0.24	0.13	$df = 28$
Range	0 – 0.89	0 – 0.05	$p < 0.01$

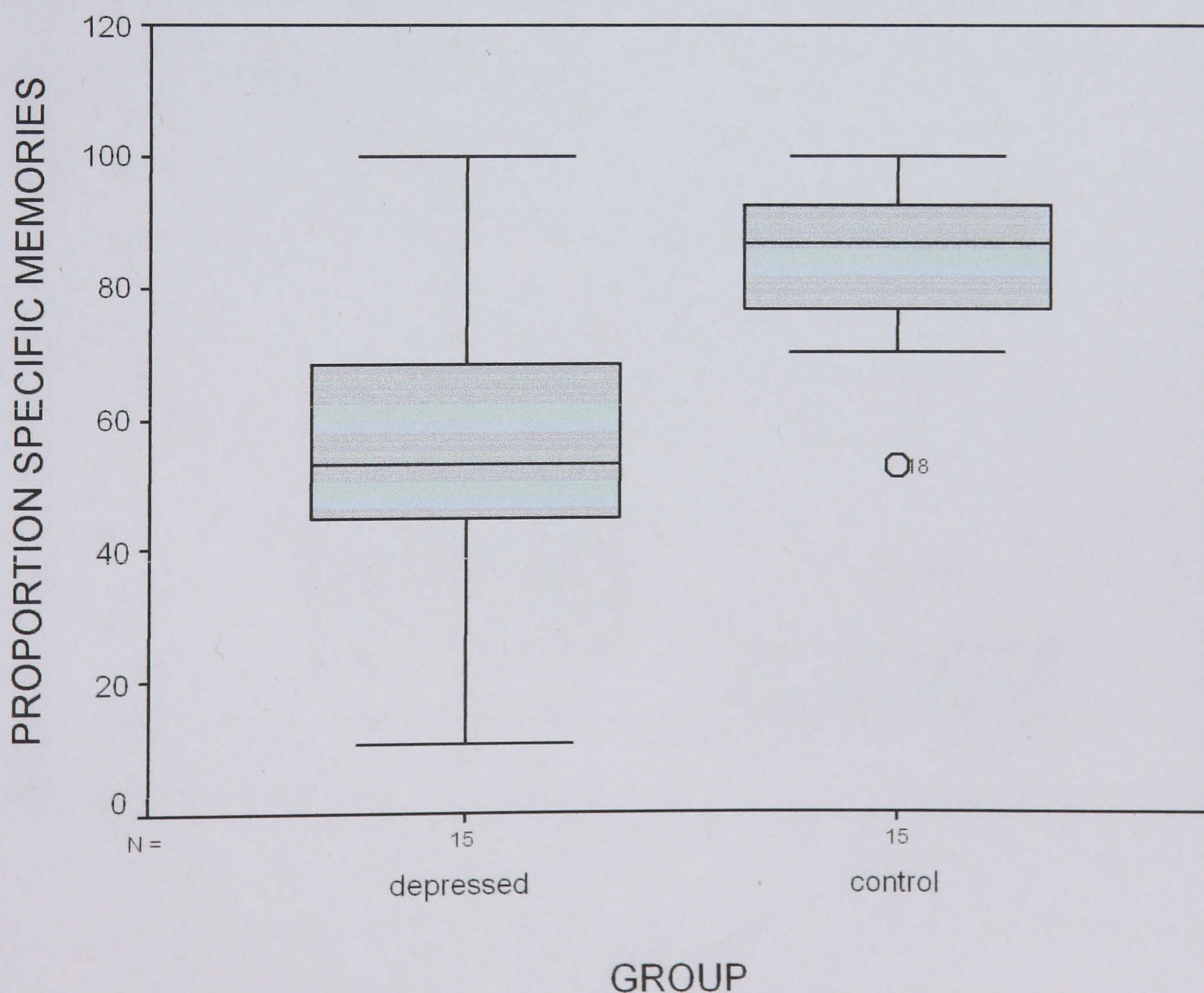
3.3.3 Types of general memories produced by each group

It was predicted that the depressed group would produce more categoric and extended memories than non-depressed controls on a standard cued recall task (hypothesis 2). The frequency of each type of memory are investigated below.

3.3.3.1 Proportion of specific responses

Figure 6 shows the distribution of specific responses between groups. It can be seen that the proportion of specific responses were normally distributed.

Figure 6: Distribution of specific responses on the standard recall task.



The box plot suggested that a t -test was appropriate (depressed Shapiro-Wilks =

0.96, $df = 37$, $p = 0.40$; control Shapiro-Wilks = 0.93, $df = 22$, $p = 0.10$). Table 4 shows that the depressed group were less specific. 55% of their responses were specific memories, compared with 84% of the comparison group's responses. This was a statistical difference ($t = 4.01$, $df = 28$, $p < 0.01$).

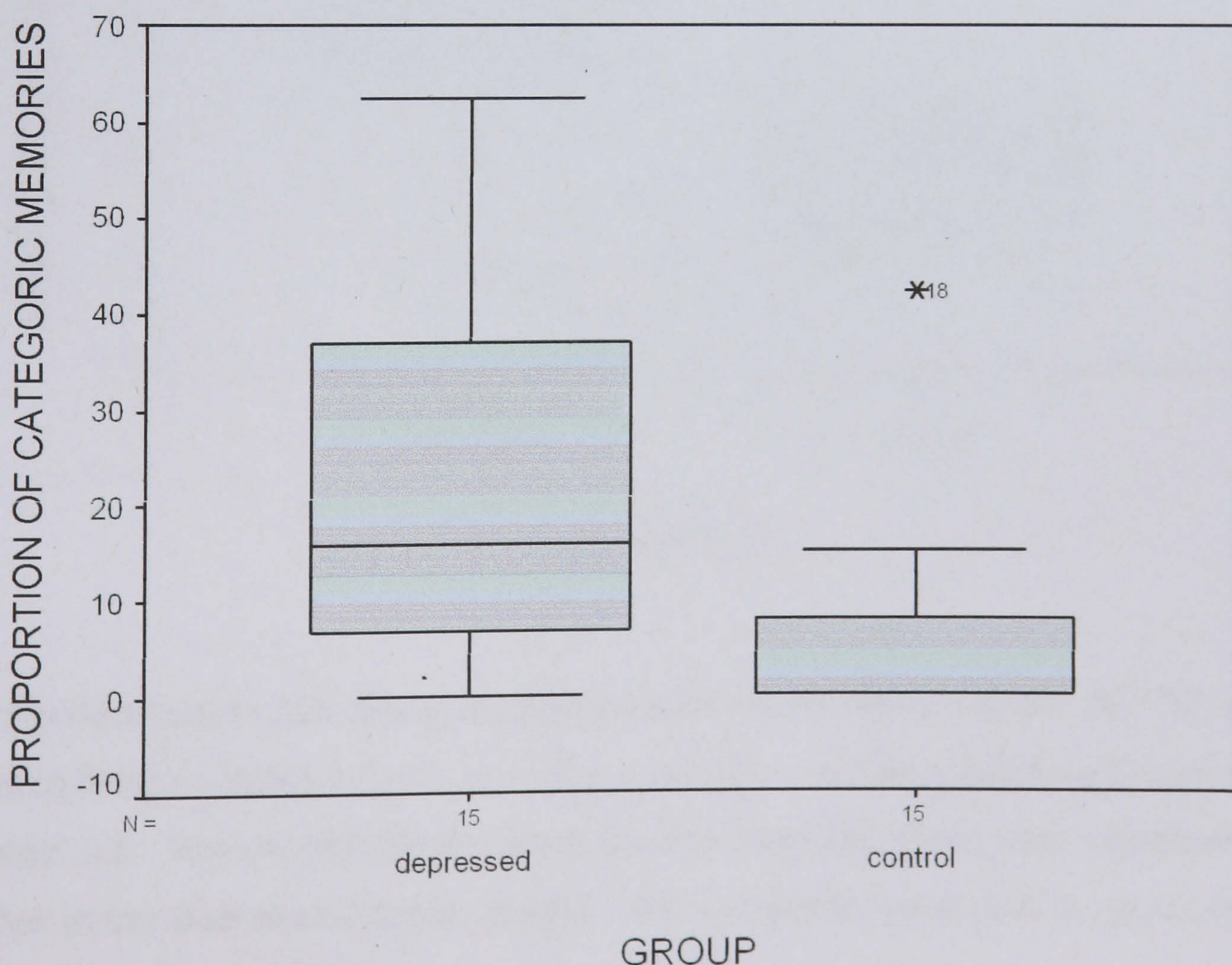
Table 4: Proportion of specific responses to standard recall task.

	DEPRESSED ($n = 15$)	CONTROLS ($n = 15$)	STATISTIC
Mean	55.25	83.57	$t = 4.01$
SD	24.10	12.99	$df = 28$
Range	10.53 - 100	52.63 - 100	$p < 0.01$

3.3.3.2 Proportion of categoric responses

Figure 7 shows the distribution of categoric responses between groups. It can be seen that the proportion of categoric responses differed between the depressed and comparison group. In addition, the distributions were skewed.

Figure 7: Distribution of categoric responses on standard recall task.



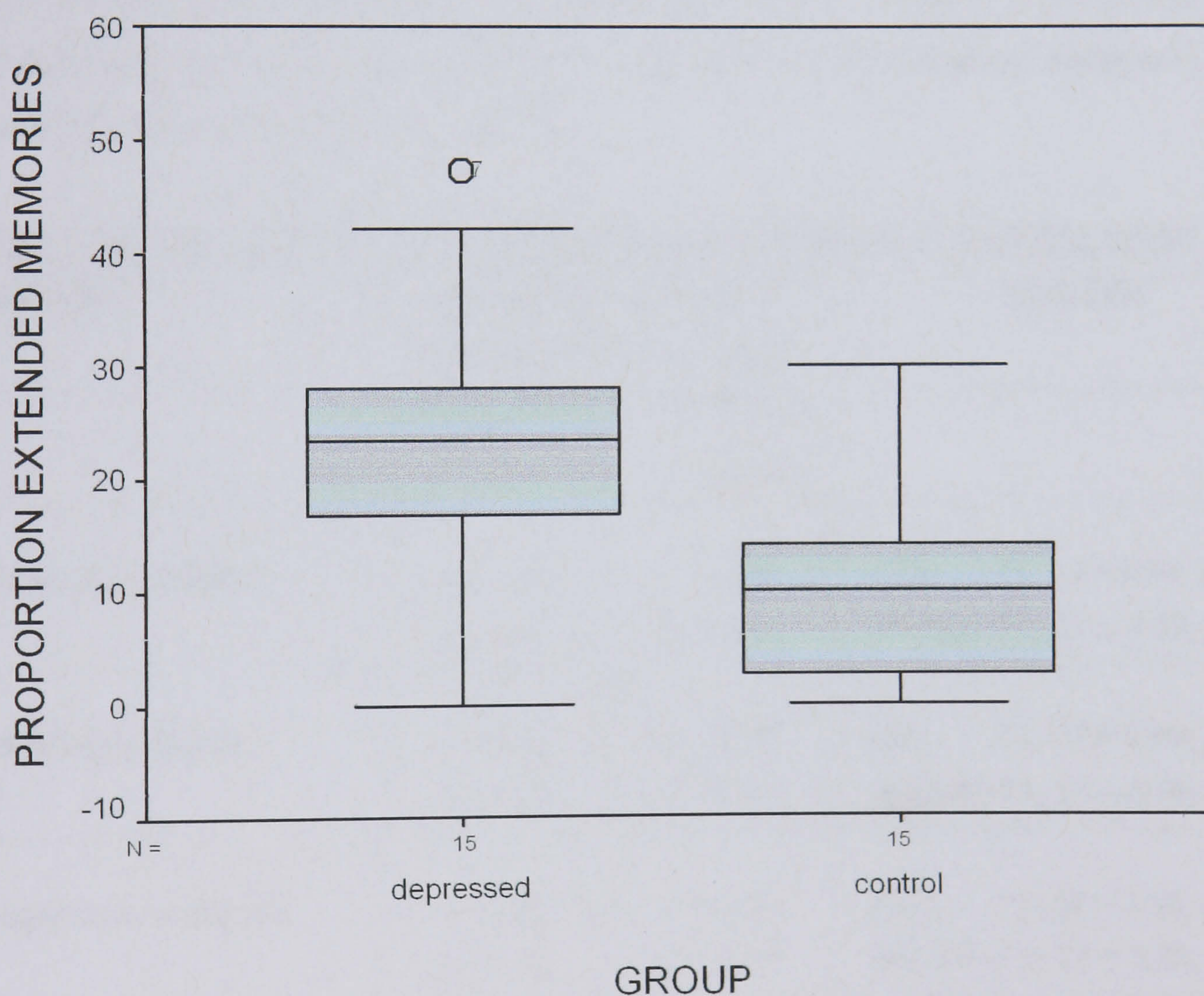
Since the distributions were skewed (depressed Shapiro-Wilks = 0.87, $df = 37$, $p =$

0.01; control Shapiro-Wilks = 0.65, $df = 22$, $p = 0.01$), a Mann-Whitney U-test was appropriate. The mean rank for the depressed group was 19.97. The mean rank for the control group was 11.03. The depressed group produced significantly more categoric responses than the control group ($U = 45.5$, $p < 0.01$).

3.3.3.3 Proportion of extended responses

Figure 8 shows the distribution of extended responses between groups. It can be seen that the proportion of extended responses differed between the depressed and comparison group. The location of the medians indicated that distribution was skewed.

Figure 8: Distribution of extended responses on the standard recall task.



As the distribution was skewed (depressed Shapiro-Wilks = 0.92, $df = 37$, $p = 0.01$; control Shapiro-Wilks = 0.92, $df = 22$, $p = 0.09$), a Mann-Whitney U-test was carried out. The proportion of memories that were extended was significantly higher in the depressed group (mean = 19.4) than the comparison group (mean = 11.6) ($U = 54$, $p < 0.02$).

3.3.3.4 Age as a confounder

The groups were not matched for age. As a result, the differences in the proportion of memory types between the groups could have been because the depressed group were significantly older than the control group. Table 5 presents the analyses relating age as a confounder. Firstly, age was correlated with each dependent variable (proportions general, specific, categoric and extended) for both groups. Pearson product-moment correlations demonstrated that there were no significant correlations between age and the dependent variables. Then the relationship between group, dependent variables and age were explored by analysis of covariance (ANCOVA). Group (depressed and control) was the fixed factor and age was the covariate. It can be seen that this analysis supported the main findings in relation to the standard recall task; the types of memories produced were related to group membership, rather than age. That is, the depressed group were less specific and produced more general, categoric and extended memories than the controls.

Table 5: Age as a confounding variable in the production of memory types

VARIABLE	PEARSON PRODUCT-MOMENT CORRELATION		ANCOVA
	DEPRESSED (<i>n</i> = 15)	CONTROLS (<i>n</i> = 15)	
Proportion general	<i>r</i> = 0.23 <i>p</i> = 0.41	<i>r</i> = -0.06 <i>p</i> = 0.84	AGE: F1, 27 = 0.64, <i>p</i> = 0.43 GROUP: F1, 27 = 8.59, <i>p</i> < 0.01
Proportion specific	<i>r</i> = -0.23 <i>p</i> = 0.41	<i>r</i> = 0.06 <i>p</i> = 0.84	AGE: F1, 27 = 0.64, <i>p</i> = 0.43 GROUP: F1, 27 = 8.59, <i>p</i> < 0.01
Proportion categoric	<i>r</i> = 0.27 <i>p</i> = 0.33	<i>r</i> = 0.03 <i>p</i> = 0.91	AGE: F1, 27 = 1.15, <i>p</i> = 0.29 GROUP: F1, 27 = 3.29, <i>p</i> = 0.08
Proportion extended	<i>r</i> = 0.01 <i>p</i> = 0.96	<i>r</i> = -0.12 <i>p</i> = 0.66	AGE: F1, 27 = 0.20, <i>p</i> = 0.89 GROUP: F1, 27 = 5.22, <i>p</i> = 0.03

3.3.4 Summary of findings on standard recall task

Hypotheses 1 and 2 were supported by the data from the standard recall task. Analysis compared the percentages of memory types between the two groups. The depressed group produced significantly more general memories than non-depressed controls. In addition, the proportions of categoric and extended memories were higher in the depressed than the non-depressed group.

3.4 Free recall task

2 predictions were made with regard to the think aloud task:

People with depression would produce more general memories than non-depressed controls (hypothesis 3).

People with depression would produce more category-category and extended-extended pairs than non-depressed controls (hypothesis 4).

The coding process was described in 2.7.2. In summary, the memory units were coded as specific if they contained a subject, verb or object together with a description (such as an adjective). For example:

“... I feel, felt very guilty the day I remembered though ...” (participant 24).

“... and then had a bit of a chat ...” (participant 18).

The remaining autobiographical memories were coded as general. Examples of general responses included:

“... there are so many, I've been sad many times ...” (participant 1).

“... it was quite hot for a couple of, for a weekend in May ...” (participant 20).

3.4.1 Productivity of the groups

The depressed group were less productive than the controls. Table 6 shows data related to productivity. The total number of words spoken in response to the 4 cue words (sad, glad, lonely and safe) differed between groups. The controls produced 50% more words in total (depressed mean = 804.54, SD = 224.28; control mean = 1267, SD = 252.27). This was a statistical difference ($t = -5.07$, $df = 26$, $p < 0.01$).

Table 6: Productivity of the groups on the free recall task.

VARIABLE	DEPRESSED (<i>n</i> = 13)	CONTROLS (<i>n</i> = 15)	STATISTIC
Number of words			
Mean	804.54	1267	$t = 5.07^{* \dagger}$
SD	224.28	252.27	
Number of memory units			
Mean	86.23	124.4	$t = 3.12^{* \dagger}$
SD	30.89	33.44	
Proportion of general memories			
Mean	70.20	51.22	$t = 2.67^{** \dagger}$
SD	22.02	15.37	

* $p < 0.01$

** $p = 0.01$

† $df = 26$

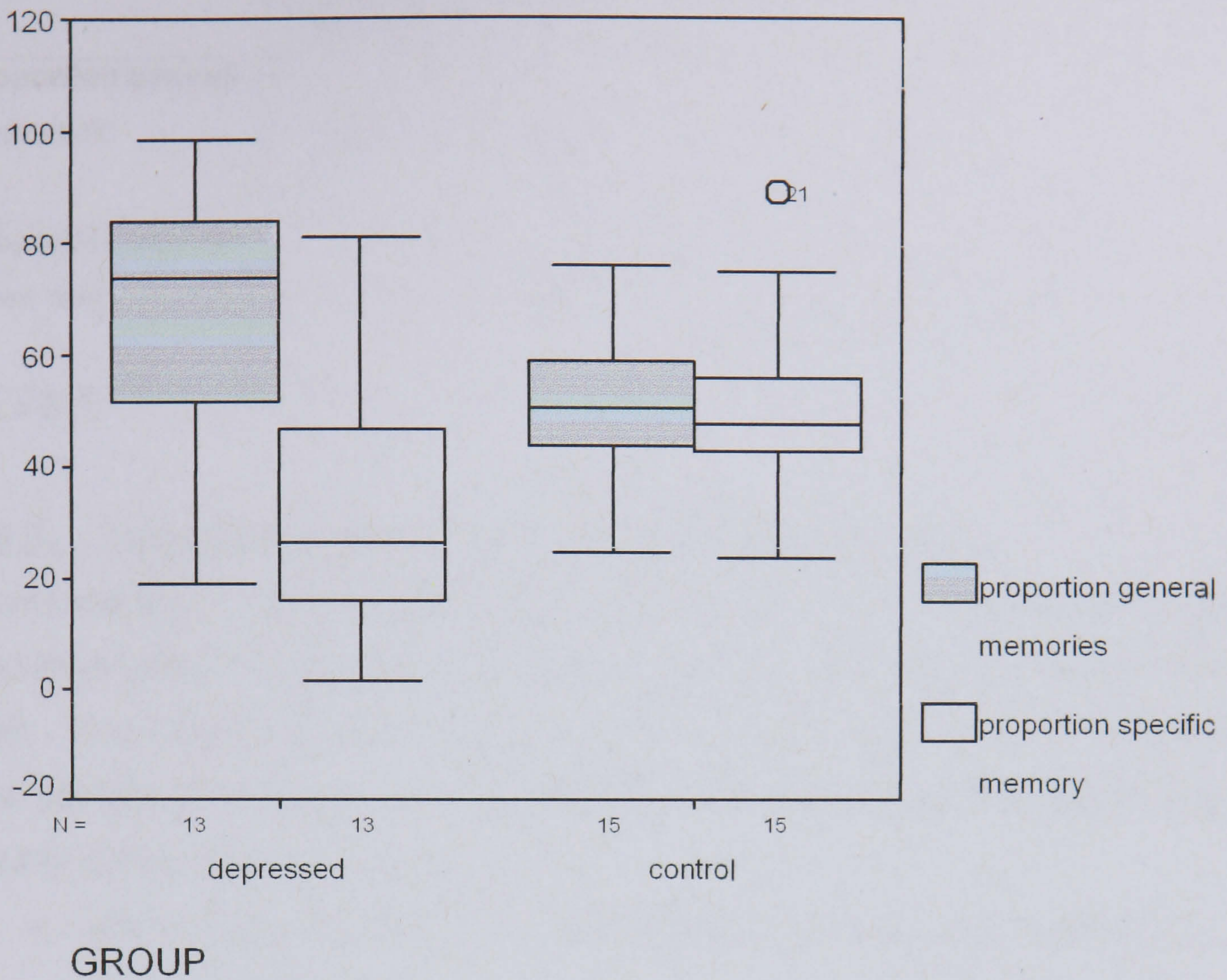
Even more significantly, the depressed group produced fewer memory units. Controls produced in excess of 40% more units than the depressed group. The total number of specific and general memories, in response to the 4 cue words (sad, glad, lonely and safe) were calculated. The mean number of memories produced were 86.23 (SD 30.89) in the depressed group, and 124.4 (SD 33.44) in the control group. A *t*-test demonstrated that this difference was statistically significant ($t = -3.12$, $df = 26$, two-tailed $p < 0.01$).

Characteristics of the task may have influenced these results. People with depression may find any timed and effortful cognitive task more difficult than non-depressed controls. The influence of task characteristics was controlled by further analysis using the percentage of general memories. Subsequent analysis, therefore, explored whether the proportion of general memories in relation to the total number of memories produced differed between the two groups.

3.4.2 Rate of general responses between groups

The rate of recall of each type of memory was calculated. This is presented in figure 9.

Figure 9: Rate of recall on the free recall task.



The rates of general and specific memories were not normally distributed in the depressed group (depressed Shapiro-Wilks = 0.90, $df = 37$, $p = 0.01$; control Shapiro-Wilks = 0.94, $df = 22$, $p = 0.27$). . Therefore Mann-Whitney U-tests were carried out. The proportion of general memory units in the depressed group was significantly higher than in the control group ($U = 43$, $p = 0.01$). The mean rank for the depressed group was 18.69, compared with 10.87 in the control group. The mean rank for specific memories in the depressed group was 10.31, compared with 18.13 in the control group. This was a significant difference ($U = 43$, $p = 0.01$). These figures are illustrated in table 7. In summary, the depressed group produced more general and fewer specific memories than the comparison group.

Table 7: Proportion of general and specific memories on the free recall task.

VARIABLE	DEPRESSED (<i>n</i> = 13)	CONTROLS (<i>n</i> = 15)	STATISTIC
Proportion general Mean rank	18.69	10.87	<i>U</i> = 43 *
Proportion specific Mean rank	10.31	18.13	<i>U</i> = 43 *

* *p* = 0.01

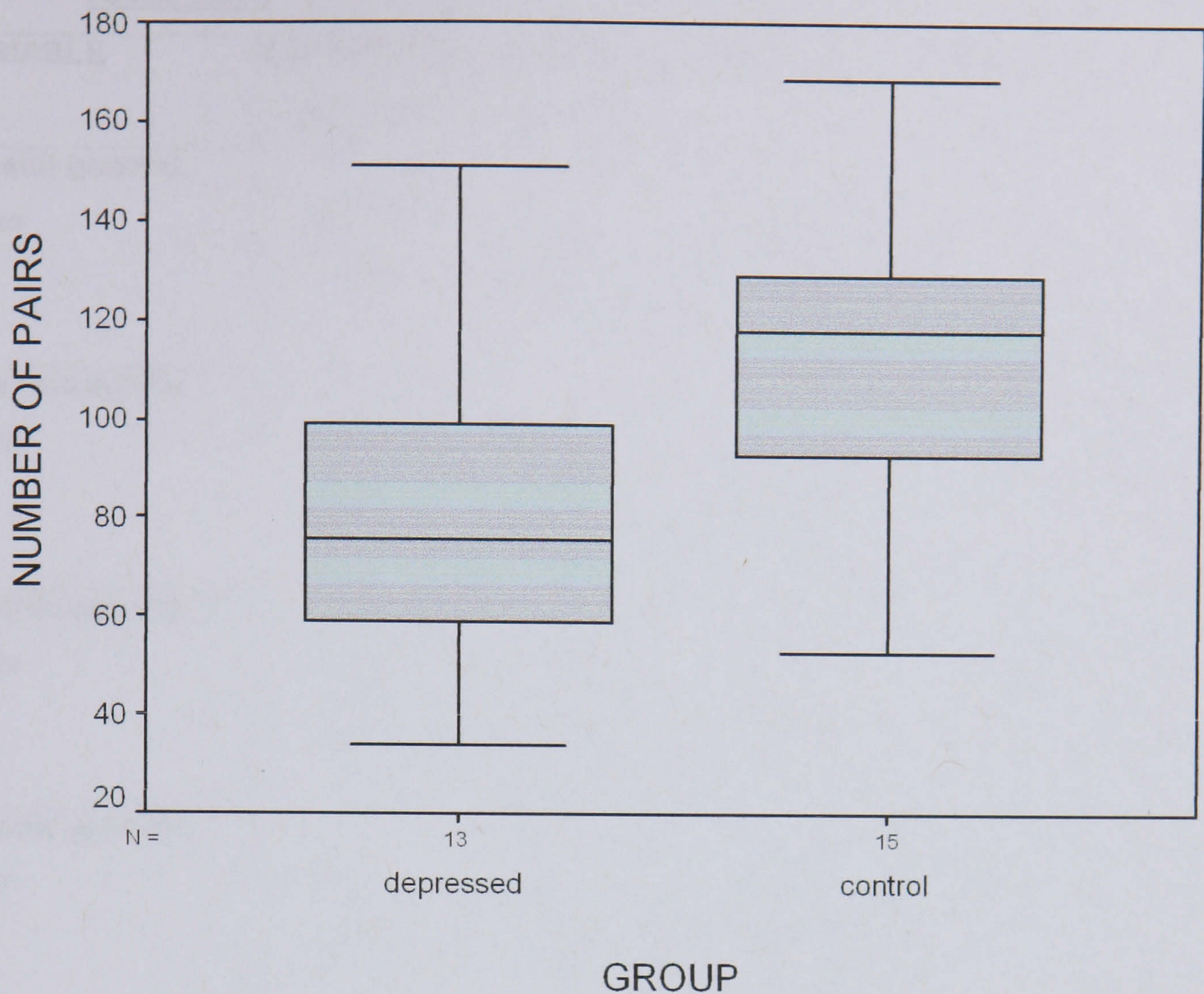
3.4.3 Frequency of types of memory-pairs between groups

It was predicted that the depressed group would produce more category-category and extended-extended pairs than non-depressed controls on a free recall cued task. Since units were not rated as categoric and extended (see 2.7.2), general and specific pairs were used. The sequence of memories was examined by counting the number of pairs as follows:

- where a general memory was followed by another general memory (general-general)
- where a general memory was followed by a specific memory (general-specific)
- where a specific memory was followed by a specific memory (specific-specific)
- where a specific memory was followed by a general memory (specific-general)

It was suggested (section 3.4.1, above) the lower productivity of the depressed group could confound results based on the analysis of raw data. The quality of the data was refined by using percentages. Initially the number of pairs for each participant was calculated. This is presented in figure 10. As the number of pairs was not normally distributed (depressed Shapiro-Wilks = 0.90, *df* = 37, *p* = 0.01; control Shapiro-Wilks = 0.96, *df* = 22, *p* = 0.64), a Mann-Whitney U-test was calculated. A statistical difference was found (*U* = 41.5, *p* < 0.01). The mean rank for pairs of memory units was 10.19 for the depressed group and 18.23 for the control group. When the productivity within groups was controlled by using percentages, the depressed group were found to have produced fewer memory units.

Figure 10: Mean number of pairs between groups on the free recall task.



3.4.3.1 Proportion of pair types

The proportion of each pair type was calculated. Each pair type was divided by the total number of pairs produced by that participant, and multiplied by 100. The calculation was as follows:

$$\left[\frac{\text{general-general pairs for that participant}}{\text{total number of pairs for that participant}} \right] \times 100$$

T-tests were carried out on these proportions. The results are presented in table 8. It can be seen that the rate of general-general pairs was significantly higher in the depressed group ($p < 0.05$). The depressed group produced significantly fewer specific-specific, general-specific and specific-general pairs than the control group. Appropriate effect sizes were found (Cohen, 1992), for all variables (Cohen's $d < 0.79$). In order to check the robustness of the analyses, Man Whitney U statistics are provided in table 8 which support the p values of the t-tests.

Table 8: Independent samples tests for proportion of each type of pair on the free recall task.

VARIABLE	DEPRESSED (n = 13)	CONTROLS (n = 15)	STATISTIC	Cohen's <i>d</i>
general-general				
Mean	66.09	40.71	$t = 3.14^{* \dagger}$	1.18
SD	24.83	17.73	$U = 36.00^{*}$	
general-specific				
Mean	4.41	8.04	$t = 2.81^{* \dagger}$	1.07
SD	3.31	3.49	$U = 43.50^{*}$	
specific-general				
Mean	4.75	7.11	$t = 2.07^{** \dagger}$	0.79
SD	2.79	3.20	$U = 52.00^{**}$	
specific-specific				
Mean	24.75	44.14	$t = 2.56^{** \dagger}$	0.97
SD	21.05	19.09	$U = 46.00^{**}$	

* $p \leq 0.01$

** $p \leq 0.05$

\dagger $df = 26$

In summary, analysis of data from the free recall task supported hypotheses 3 and 4. A higher proportion of the depressed group's responses were general. They also produced fewer specific memory units. The depressed group produced significantly more general-general pairs and fewer specific-specific pairs than the comparison group.

3.4.4 Age as a confounder

Since the depressed group were significantly older than the controls, the proportion of general and specific memories were correlated with age. This analysis is shown in table 9. It can be seen that there was a significant relationship between age and the recall of a both memory types in the depressed group. That is, older depressed participants produced more general and fewer specific memories than younger depressed participants. However, this relationship was not found in the control group. Further, when age was controlled by carrying out analysis of covariance, the difference in specificity between groups was not significant.

When the proportion of pairs was correlated with age, no significant relationships were found. However, detailed analysis of age and pair types suggests that the effect of age is not straight forward. Age was found to correlate positively with the number of general-general pairs and be negatively correlated with the number of specific-specific pairs in the depressed but not the control group. Further, there were significant age effects (but non-significant group effects) for general-general and specific-specific pairs and a significant group (but non-significant age) effects for general-specific pairs. Neither age or group were significant for specific-general pairs.

Table 9: Age as a confounding variable in the free recall task

VARIABLE	PEARSON PRODUCT-MOMENT CORRELATION		ANCOVA
	DEPRESSED (<i>n</i> = 13)	CONTROLS (<i>n</i> = 15)	
Proportion general	<i>r</i> = 0.68 <i>p</i> < 0.01	<i>r</i> = 0.41 <i>p</i> = 0.13	AGE: F1, 25 = 12.67, <i>p</i> < 0.01 GROUP: F1, 25 = 0.09, <i>p</i> < 0.77
Proportion specific	<i>r</i> = -0.69 <i>p</i> < 0.01	<i>r</i> = -0.47 <i>p</i> = 0.08	AGE: F1, 25 = 14.02, <i>p</i> < 0.01 GROUP: F1, 25 = 0.08, <i>p</i> = 0.78
Proportion of pairs	<i>r</i> = -0.37 <i>p</i> < 0.21	<i>r</i> = -0.13 <i>p</i> = 0.64	AGE: F1, 25 = 1.70, <i>p</i> = 0.20 GROUP: F1, 25 = 1.83, <i>p</i> = 0.19
Proportion of gg pairs	<i>r</i> = 0.60 <i>p</i> < 0.03	<i>r</i> = 0.49 <i>p</i> = 0.07	AGE: F1, 25 = 11.08, <i>p</i> < 0.01 GROUP: F1, 25 = 0.68, <i>p</i> = 0.42
Proportion of gs pairs	<i>r</i> = -0.04 <i>p</i> = 0.90	<i>r</i> = 0.06 <i>p</i> = 0.84	AGE: F1, 25 = 0.00, <i>p</i> = 0.96 GROUP: F1, 25 = 4.77, <i>p</i> = 0.04
Proportion of sg pairs	<i>r</i> = -0.14 <i>p</i> = 0.65	<i>r</i> = 0.04 <i>p</i> = 0.88	AGE: F1, 25 = 0.06, <i>p</i> = 0.06 GROUP: F1, 25 = 2.08, <i>p</i> = 0.16
Proportion of ss pairs	<i>r</i> = -0.68 <i>p</i> = 0.01	<i>r</i> = -0.47 <i>p</i> = 0.08	AGE: F1, 25 = 12.97, <i>p</i> < 0.01 GROUP: F1, 25 = 0.03, <i>p</i> = 0.86

3.5 Summary of findings

The depressed group were less productive than the comparison group on both standard and free recall tasks. To prevent productivity acting as a confounding variable, proportional data were calculated. Subsequent analysis of the data found that there were differences between the groups. The depressed group produced significantly fewer specific memories on both the recall tasks. In addition, they produced significantly more general memories on both tasks. On the standard recall task, the depressed group produced significantly more categoric and extended memories than the comparison group. This may be consistent with Williams (1996) mnemonic interlock hypothesis. However, the findings from the free recall task may have been influenced by the older age of the depressed group and resulted in them producing more general-general pairs and fewer specific-specific pairs than the comparison group. Only the rate of general-specific pairs was significantly lower in the depressed group, when age was controlled by analysis of covariance. Thus, the hypothesis that people with depression experience an aberration at the general level of the memory hierarchy was supported by the results of the standard recall task, but not by the free recall method. These findings are discussed further in chapter 4.

DISCUSSION

4.1 Overview

This study investigated autobiographical memory retrieval. The overarching aim was to explain why people with depression fail to produce specific memories. It was predicted that the memories produced by depressed people would be more general than those produced by a comparison group. A cross-sectional design was used to explore differences between a clinically depressed and a comparison group.

Two recall tasks were used: a standard cued recall task and a free recall task. 15 people with a diagnosis of clinical depression completed the standard recall task. Due to the poor sound quality of one recording and one participant withdrawing half way through the interview, 13 full data sets were available for the free recall task. Data from the clinically depressed group were compared with responses from 15 controls who all completed both tasks. The comparison group were staff members, recruited through opportunity sampling. The groups were matched for gender and whether they lived with a partner. However, the depressed group were significantly older. The implications of this are discussed below (subsection 4.6.1.2).

Responses were rated according to their specificity. Four autobiographical memory types were identified: specific, general, categoric and extended. The depressed group were found to be less productive than the comparison group. They produced fewer memories and more non-autobiographical responses. This difference was controlled for by calculating the proportion of each memory type for each respondent. Statistical analysis of the percentages of each memory type supported the prediction that the depressed group would be more over general. This discussion investigates how data from the current study can be used to explore the retrieval process. In addition, it explores the roles of rumination and avoidance of emotions, and their contribution towards over generality.

The main findings of the study in relation to the quantitative analysis, are presented in section 4.2. This section considers the results in relation to the hypotheses. Next, in section 4.3, the qualitative data produced in this study are

discussed. This section explores the data in relation to memory retrieval processes. The third section (4.4), examines the relevance of the study to theoretical issues and existing literature. The clinical implications are presented and discussed in section 4.5. Methodological limitations and recommendations for future research are discussed in 4.6. Limitations relevant to clinical practice are presented in detail in the Critical Review and do not, therefore appear in this chapter. The chapter ends with the main theoretical conclusions that can be drawn from the current study.

4.2 Discussion of main findings

4.2.1 Quantitative analysis

Quantitative analysis investigated the statistical differences between the depressed and comparison groups. Barker, Pistrang and Elliott (2002) suggest that most research adopts an alpha value of 0.05, and a power of 0.80. An alpha value of ≤ 0.05 was accepted as indicative of the probability of detecting an effect. In addition, the sample was large enough to detect a large effect size. Cohen's *d* calculations were ≤ 0.79 .

4.2.1.1 Generality of memories:

The study investigated levels of over generality in the sample. Two hypotheses (hypotheses 1 and 3) specifically addressed the prediction that people with depression would produce more general memories than non-depressed controls.

Analysis of data from the standard cued recall task found that there was a statistical difference in the rate of over general responses. Further, this statistical difference was upheld even after unclassifiable responses were excluded. Although the depressed group produced fewer autobiographical memories in total, the proportion of those memories that were specific was smaller.

Initially, the raw data from the free recall task suggested that there were no group differences in the level of specificity. The depressed group did not appear to be more over general. However, as with the standard recall task, the depressed group were less productive than the control group. That is, they produced both fewer words and fewer individual memory units. It may be that the effortful and timed characteristics of the task influenced the depressed participants' ability to

succeed in meeting the task requirements. For example, difficulties with maintaining attention on the task or slowed information processing speed in depression (Lezak, 1983) could have resulted in the depressed group producing fewer words and fewer memories. In order to reduce the likelihood of the results being confounded by the characteristics of the task, further analysis was carried out using percentages rather than raw data. This analysis found that the depressed group did indeed produce more general memories, and the control group produced more specific memories. However, these differences were confounded by age differences between the groups. The influence of ageing and recommendations for future research that controls for age differences between the groups are discussed in section 4.6. Such research may promote theoretical understanding of the processes that result in this bias towards over generality. In the meantime, the results of the free recall task contribute towards the conclusions that can be drawn from standard cued recall tasks. Standard tasks allow the respondent 60 seconds to produce a response. However, people with depression have been shown to experience slowed information processing speed (Lezak, 1983). The free recall task suggests that, despite being given twice as long to retrieve memories, people with depression still experience difficulty in accessing specific, contextual information. Instead of recalling specific memories, the depressed group were more likely to retrieve information that was general, or thematic.

4.2.1.2 Types of over general memories

The study found that both categoric and extended memories were more frequent in the depressed group than non-depressed controls. Two hypotheses (hypotheses 2 and 4) specifically addressed the prediction that people with depression would produce more categoric and extended memories.

The difficulty coding the transcripts of the free recall task for hypothesis 4 was discussed in detail in the method (see 2.7.2). The types of over general memory produced was investigated, therefore, using data from the standard recall task. Analysis found that there was a statistical difference between groups: the depressed group produced more categoric and extended memories on the standard recall task. This difference was found despite the depressed group producing fewer memories in total. When the disparity in productivity levels was controlled for, the difference between the groups was still significant. This is an

important finding as it suggests that depressed participants have access to less contextual information during memory recall. This may have implications for their sense of self and for their ability to find solutions to problems (see relevance of the findings to theoretical issues and the literature, below).

4.2.1.3 Memory retrieval process

The memory retrieval process was explored. It was predicted that people with depression would experience an aberration at the general level of the hierarchy (hypothesis 4). They were expected to fail to move vertically down the hierarchy from general to specific memories. Instead, they were expected to move horizontally across the hierarchy, from general to general memories.

The study found that the depressed group produced more consecutive memories from the general level. By comparison to controls, they produced more general-general pairs. In addition, the depressed group produced fewer specific-specific, specific-general and general-specific pairs.

The depressed group produced fewer specific memories in the free recall task. This reduced the potential for the depressed group to move to and from a specific memory. That is, they had less opportunity to produce general-specific, specific-specific, specific-general pairs. This bias was offset by using percentages rather than raw data. The frequency of each pair type was expressed as a proportion of the number of pairs produced by that participant. The results found that the depressed group were more likely to move horizontally than the control group. They produced significantly more general-general pairs. Further the control group demonstrated more flexibility in moving around the hierarchy. The control group produced more mixed pairs (specific-general and general-specific). This suggests that they could move more readily up and down the hierarchy between specific and general levels.

The higher rate of specific memory units in the control group could have resulted in more specific-general, general-specific or specific-specific pairs. Although the frequency of same type pairs (specific-specific and general-general) between groups was expected, this is an important finding as it suggests that both groups were retrieving memories from one level within the hierarchy. For specific-specific and general-general pairs, there were significant differences between the groups.

That is, the depressed group were producing fewer consecutive specific memories and more consecutive general memories, whilst the pattern of retrieval was reversed in the control group. In addition, there were more cross type pairs (specific-general and general-specific) in the control group. This could not have been predicted simply by examining the rate of general and specific memory units between the groups and suggests that the depressed group were less likely to move vertically through the hierarchy. The implications of a reduction in the ability to move around the hierarchy are discussed below (see 4.5.).

4.3 Qualitative analysis

It has been suggested that the autobiographical memory structure is hierarchical (Conway, 1996). When retrieving a memory, a search enquiry is generated. Then the search moves vertically down the structure until an appropriate memory, that fits the search criteria, is accessed (Williams and Dritschel, 1992). A memory produced in response to a standard recall tasks can be evaluated in terms of whether it is specific or not. This, and other studies have demonstrated that people with depression are biased towards producing over general memories. The memories they produced were characterised by a lack of contextual details. However, studies that have relied on the standard cued recall method result in speculation about the retrieval process since only the retrieved memory is available for observation. Theoretical explanations such as “mnemonic interlock” (Williams, 1996) and the avoidance of emotions were discussed as possible reasons for the lack of specificity in people with depression (see section 1.6.4). However, in order to observe how memories are recalled, and whether there is an aberration at the categoric level of the memory structure, an alternative method was required.

The aim of the project incorporated a need to bridge the gap between the wealth of quantitative research available and a more qualitative approach that allowed for the observation of memory retrieval processes. The study emanated from quantitative research and, as a result, the alternative methodology needed to be guided by relevant theories regarding memory retrieval. It was not appropriate, therefore, to use purely qualitative methods, such as grounded theory, (this is discussed further in section 4.6.1.3). Only one study (Barnhofer et al 2002) was found during the literature search that adopted an alternative method to explore the memory retrieval process. Those authors asserted that the free recall task

was useful in exploring memory retrieval. The relevance of the current study in relation to the findings of Barnhofer et al are discussed below in section 4.4. In this section, the data from the current study are used to observe the retrieval process. Indeed, it was possible to use most of the data to explore memory retrieval; the majority of the responses could be coded as general, specific or task related. The latter (task related) material provided evidence of the memory processes (such as search enquiries and identification tags). Of 3222 units, 53% (n = 1696) were general memories, 39% (n = 1253) were specific memories and 7% (n = 240) were task related utterances. The remaining 1% (n = 33) were either current reflections (such as feeling safe at the moment of participation) or prospective memories (such as needing to remember something in the future). Participant 11's response to the cue word "sad" is reproduced below to illustrate how the retrieval process could be observed using the data collected.

Participant 11, cue word "sad":

"Sad, um, probably watching the news yesterday. Um. I am picturing the TV screen and the report on the Russian hostages. Um but yeah, I can see the TV screen and I can see kind of the horrible images of the kids being dragged out and I can also remember the sound of the reporter's voice was kind of half terrified, half excited and caught in the middle of all the shots and stuff. Um and just kind of thinking how shitty the world can be sometimes. Um and don't know. It kind of - my thoughts kind of go so far and then go blank, and I'm kind of now wondering why that is. Um I think there's I'm kind of stuck on the images that are on the TV screen and the sounds of all the shouting around at that reporter. That kind of Russian voices in the background that all sounded really terrified. Um and that's just repeating over and over in my head and it don't seem to be going anywhere....." [end of the 2 minutes]

This transcript shows that the respondent reports specific memories from different modalities, such as the visual memory of seeing the television screen and the auditory memory of the sound of the reporter's voice. The association between separate memories is illustrated as she moves from recalling the visual image to the auditory one. Only 2 responses deviated from this protocol: participant 20's response to "glad" and participant 9's response to "safe" did not include an autobiographical memory (see section 4.3.2 for further discussion of this). Out of 112 transcripts (4 for each participant), 110 (98%) contained responses from at least 2 modalities. These modalities included thoughts, emotions, physical actions and sensations. This supports the theory that memories are contained within a network.

The transcript (above) also demonstrates how the participant moves from specific descriptions about the quality of the reporter's voice to a general reflection about how cruel the world can be at times. This suggests that she was moving vertically through the hierarchy. The structure of autobiographical memory is discussed in more detail in sections 4.3.3 and 4.3.4. Prior to this, themes relevant to the literature review and theories of memory retrieval are discussed in turn.

4.3.1 The use of a search enquiries.

Participant's were observed to use search enquiries in response to the cue words. For example, in response to the cue "lonely", participant 14 stated "recall a specific time and date I feel lonely" before producing an autobiographical memory; participant 15's immediate response was that she was "just trying to think of a specific time..." before going on to retrieve autobiographical memories. Indeed, 61% of the respondents (n = 17) began at least one response by stating the cue word. For example:

- "glad, glad ..." (participants 12, 17 and 27).
- "when I was glad ..." (participants 2 and 11).
- "when I felt safe ..." (participants 19 and 22).
- "sad" (participant 27).
- "when I was sad ..." (participant 3).
- "lonely ..." (participants 3 and 28).

These illustrate that participants began the retrieval process by setting themselves a search enquiry. In the majority of cases, the initial search enquiry was the restating of the cue word. Twenty four percent of responses (27 out of 112) included reference to their search being for a specific time (such as, the time I felt safest; trying to t think of a specific time). Seven percent (8 out of 112) referred to thinking of different people (for example, close family; a partner).

The section of participant 31's response is explored in detail to show how respondents' used search enquiries. The section of transcript is in response to the cue word "safe". It illustrates how participants were observed to add to their search enquiries when the cue word was insufficient for a successful search. The additions to the search enquiry are underlined.

Participant 31: sections of response to cue word "safe"

"... I never feel safe. And so it's hard to recall specific times, only the fact that when <male>, whenever <male>'s with me, I always feel safe. I know he's there for me. But other than that, most of the time I don't feel particularly safe. I can't really recall. I'm trying to think of for different people but... Particular times but I can't really think of. When I feel, when I feel 100% safe. I don't think I ever will feel that, feel that way. Nothing, comes to mind at all. I always think of safe of when nobody's going to hurt you, and you've got nothing to worry about at all but, I don't really feel like that...."

It can be seen that the participant re-emphasises the task demands by stating that she must recall a specific time when she was safe. This search enquiry was insufficient and failed to generate a specific event. The respondent generated a general memory: she "always feel[s] safe". Then the search was refined by adding further enquiries. The respondent explained that she was trying to think of feeling safe with different people. This broadened the search area. Memories of events that occurred with other people were also being reviewed, rather than restricting the search to feelings of safety when with the named individual ("<male>"). Next, the search was directed to include different times in the respondent's life. Again, this broadened the part of autobiographical memory that was searched. The search area now included events that had occurred at any time during her history.

The respondent's eventual search enquiry could be summarised as "find a specific time when I felt 100% safe". The temporal location of the memory was not specified. No particular time frame was indicated, as would be the case if she had stated "when I felt safe during childhood", for example. However, she did specify that she would find a memory once she had identified a relationship where the other person involved was not going to hurt her. Despite the refinements to the search enquiry, the participant was unable to recall a specific memory ("but I can't really think of.").

Having been unable to retrieve a specific memory, the respondent summarised the cognitive processing she had just completed. She stated that she was searching for a time when she had felt 100% safe. Then she stated that her search was unsuccessful ("nothing comes to mind at all"). The transcript ends with the respondent explaining why she thought the search was unsuccessful. She gave her definition of safe (when nobody is going to hurt you, and you have nothing to worry about). Then she stated that the criteria did not apply to her experiences.

Sixteen percent of responses (18 of 112 responses to the cue words) included a definition, or an explanation of the respondent's understanding of the cue word. The implication of repeatedly failing to find a specific memory in terms of the effect on the self concept are discussed below (see 4.5.1.1).

As stated above, many participants were observed to utter their search enquiry at the outset of the retrieval process. It is suggested that once the search enquiry is set, memories are checked against identification tags stored with each memory.

4.3.2 The use of identification tags

The transcripts showed that respondents were checking the search enquiry against successive memories. It was mentioned earlier that there were 2 responses to cue words that did not include an autobiographical memory (participant 9's response to "safe" and participant 20's response to "glad"). Participant 9's response was very sparse: He stated that he could not think of anything and that nothing "seemed to match". This latter comment suggests that he was comparing the cue word "safe" against identification tags. Participant 20 stated that each memory reviewed did not contain a "glad" tag: "... every opportunity I seem to come across a brick wall, I'm like no notno ... " (The full transcript of participant 20's response to the glad cue is provided in 2.7.2.3 page 122).

The merit of particular tags in successfully identifying distinct memories was often described by respondents. Two sections of transcripts, from participants 27 and 19, illustrate this:

Participant 27: section of response to cue word "safe"

"... It's funny because I think, well, in order to feel safe do you also have ... does that also have to be a threat around? You know is it, because I'm not sure I'm conscious of um, very often feeling threatened and therefore needing to feel safe. Um. I can remember occasions, of being bullied, when I was a child, I can't remember when, when I started to feel safe again ..."

Similarly, participant 19 encountered the same difficulty in searching for the cue word as an identification tag:

Participant 19: section of response to cue word "safe"

"... when I was safe. I think that's quite hard. I don't know. All I can

think of is my mother. That's the only thing I can think of, but I can't think of a specific event that made me feel safe, because I probably always felt safe, so I can't think of anything specific because you'd have to have a contrast between feeling unsafe therefore feeling safe and I probably always felt safe. So I can't think of a specific event but all I can think of is my mother....”

It can be seen that both respondents were searching for the identification tag “safe”. They both explained that they were searching for distinguishing features in relation to the task requirements. They were attempting to find memories that contained the label “safe” and rule out those memories with the identification tags “unsafe” (participant 19) and “threat” (participant 27). For participant 27, it appears that, during the storage of memories, he had used the identification tag “threat”. However, he had not used an opposing tag labelled “safe”. For participant 19, since most of her memories were of feeling safe, the “safe” tag was insufficient to lead the search to a unique memory. As a result, she produced a general memory of her mother. Eight percent (9 out of 112) responses made direct reference to the cue word being general and 8% (9 out of 112) included comments that the participant was only able to retrieve general memories. In addition to contrasting words (such as, threat versus safe, above) respondents often offered alternative words (such as “safe” and “secure”, participant 23) to facilitate their searches. Thirty four percent (38 out of 112) responses included a synonym or a contrasting word during the search process.

Analysis of the transcripts, therefore, supports theories that suggest that search enquiries (Williams and Dritschel, 1992) and identification tags (Williams and Scott, 1988) are used to navigate around the autobiographical memory system. Further, the study supports the suggestion that memory retrieval is a constructive process (Craik, 1994).

4.3.3 The hierarchical structure of memory

During the coding process, memory units were identified (see 2.7.2.1). In addition, memories could be classified as specific or general. Further, movement between specific and general memories during retrieval processes was observed. Taken together, these findings suggest that memories are distinct, but connected. It is logical to expect the quantity of contextual details to exceed the quantity of categories. For example, there are more *colours* than there are *ways* to describe colours (shades, brightness etc.). As a result, it is convenient to describe the

system as hierarchical. This study did not produce data that contends this protocol. However, the data neither refutes or supports Conway's (1996) theory that the base of the hierarchy is a pool of contextual information. One could envisage a scenario where the task is to recall a general theme. For example, participants could be asked to describe themselves in terms of traits that are often exhibited by people. The individual might first recall several specific events before concluding that s/he is organised. In this example, the bottom of the hierarchy could arguably be general events or themes. The data collected supports the notion of a memory network. However, whether memory is hierarchical with specific, contextual data at the bottom, is speculative. Conway's theory (1996) is provisionally accepted, on the basis that it is a convenient way of describing the autobiographical memory structure.

4.3.4 Navigation around the autobiographical memory network

4.3.4.1 Movement down the hierarchy

The introduction suggested that memory searches start at the general level and move down the hierarchy to a specific level (see 1.4.3). Should this be correct, one would expect general-specific pairs as the individual moves from the general to the specific level. Seventy six percent (85 out of 112 responses to all cue words) started with a general memory; 52% (58 out of 112) of responses started with general retrieval before recalling a specific memory. This is illustrated in the first part of participant 15's response to the cue word "safe" (below). For convenience, the transcript is divided into memory units, separated by "|". It can be seen that the participant moves through general memories of her holiday to a specific memory of a diving trip.

Participant 15: section of the response to cue word "safe"

"....um ... I suppose what's going through my mind at the moment is when I was on holiday | um ... um ... on, on my diving trip, | on the first diving trip which was on the I think it was on the Tuesday | and we went down with these guys | these diving dive masters | and you're only supposed to go down to 18 metres | and they took us down to 30 metres, um

Other participants were observed to become increasingly specific during the retrieval process. That is, 27 of the 28 participants (96%) produced general-specific pairs. For example, in response to the cue word "safe", participant 7

reflected on an extended period “2001”. During this time he *generally* had “no particular kind of residence”. Then he focused in on a shorter period of time (“September”), and finally retrieves a specific memory. The general-specific pair was:

“well I started the job in September so it would have been around that time → caravan was kind of delivered down “ (participant 7).

Another example is illustrated in participant 30’s response to the cue word “glad”. The respondent recalled an extended period, when she was pregnant. This was followed by a description of her daughter when she was first born: “I was never alone when I was pregnant → and she was so perfect”.

4.3.4.2 *Movement up the hierarchy*

General memories in specific-general pairs may function as summaries. Another extract from participant 15’s transcript, below, illustrates how she summed up with a conclusion that can be drawn from the scenario: that she does not have a problem stretching boundaries, but her companion does. She moved from a specific to general level and in doing so, interpreted the meaning of the event.

Participant 15: section of the response to cue word “safe”

“... and they took us down to 30 metres, um | and you know I, I don’t have a problem with, with kind of stretching boundaries like that | but <name> does

Ninety three percent (n = 26) of participants produced at least one summary. For example, participant 29 described specific events and conversations shortly before her mother died. She ended by stating her sadness about the memories she had recalled. The conclusion of the string of specific memories was “it really does sadden me that someone had become so, so unwell, and had battled so hard all her life”. In response to the cue word “sad”, participant 27 recalled the circumstances around the death of an uncle. He described how he had burst into tears whilst sitting at the dinner table, and how his children had been very understanding. One of the children had started to cry with him. He then commented that his children’s sympathy was representative of their general behaviour with the *general* statement “which I guess they do don’t they”.

4.3.5 Starting new searches

Specific-general pairs also arose when respondents had successfully completed the task. Once they had recalled a specific memory they started new memory searches. This resulted in a return to the general level of the hierarchy. This is illustrated at the end of participant 15's transcript. She stated the general rule that related to her relationship: that he looks out for her (1). She then started a new search (2) and generated another example of this rule (3). The new memory was not within the same category as previously recalled specific memories. That is, it did not fall within the holiday theme where initial specific memories were temporally located.

Participant 15: section of the response to cue word "safe"

"...so it's quite nice to have someone like making me feel safe | um and I suppose, I suppose sort of generally in our relationship as a general rule actually, 1 | I know this isn't specific | but it's just what's coming into my mind | he does make me feel safe 2 | and um another example I'm thinking about is when we first started going out with him it must have been August last year um | ... I, I was going out in the evening and walking home on my own 3 | and, and he was all concerned about me walking home on my own 3...."

Seventy five percent (n = 21) of participants completed at least one search with specific, descriptive memories and then started a new search by retrieving general memories. For example, participant 31 described telling her parents about her experiences of being abused. She described where she was sitting and what her parents said in response. The end of the consecutive specific memories was marked by a description of how she felt (1). She then began another search by setting a fresh enquiry (2):

"...I felt so alone and lonely that I thought they'd be there for me and they weren't 1 | other times I've felt lonely is um well <male> works nights 2 | (participant 31).

4.4 Relevance of the findings to theoretical issues and the literature

Barsalou, Lancaster, Spindler, George and Farrar (1988 in Barsalou, 1988) suggested that summarised events are functional in providing access to specific memories. One would expect, therefore, that general memories and general-specific pairs would be produced by both the depressed and the control group. The current study supported this. However, the frequency of general responses

distinguished between the two groups. Depressed participants produced fewer general-specific pairs.

In relation to the standard cued recall task, and specifically the frequency of general versus specific memories, the current findings demonstrate that the sample were representative of clinically depressed participants used in previous studies (such as, Williams and Scott (1988); Williams et al (1997); Moore et al (1988); Wessel et al (2001); Wessel et al (2002); Brittlebank et al (1993); Goddard et al (1996); Kuyken and Dalgleish (1995); Kuyken and Brewin (1995); and Arnz et al (2002)).

Studies that have used a standard cued recall task have lead to speculation about the retrieval process in depression. For example, it has been suggested that ruminative processes (Spence, 1988) and avoidance of specific memories (Wessel et al 2002) result in over general memory production. However, Barnhofer et al (2002) suggest that a characteristic of the task could be confounding the results. It might be that the failure to produce a specific memory resulted in participants starting further searches. These new searches begin at the general level of the hierarchy. Since retrieval processes on standard recall tasks are not observed, it was not possible to say whether participants were carrying out consecutive searches. However, if this were the case, the 60 second time limit may mean that depressed participants had insufficient time to complete the task. If they were given longer to retrieve memories, they may have produced more specific responses. Group differences in standard recall tasks may, therefore, be a product of slowed information processing in depression.

A review of the literature only identified one study that had adopted an alternative cued recall method. Rather than simply coding the memory that participants produced, Barnhofer, et al (2002) used a free recall task. The think aloud procedure enabled them to explore the relationship between consecutive memory units. "Normal" recall that meets the task demands would predict movement from general memories, down the hierarchy, to a specific memory. Whereas in mnemonic interlock (Williams, 1996), the pattern of recall would reflect a move horizontally from general to general memory. They found that, by comparison to controls, people with depression were more likely to move horizontally across rather than vertically down the hierarchy. It was concluded that their findings were

broadly consistent with a mnemonic interlock hypothesis.

Data from the free recall task enabled Barnhofer et al (2002) to explore whether people with depression experienced an aberration at the general level of the hierarchy. However, their findings could not totally refute the alternative hypothesis. It remained possible that the demands of the task were acting as a confounding variable. To explore these further, the role of avoidance and rumination are considered, below.

4.4.1 The role of avoidance of emotions

Rumination as a process that results in a failure to access specific memories is discussed below (subsection 4.4.2). However, it was suggested in the introduction that rumination may be a process motivated by attempts to avoid emotions.

Participant 11 explicitly referred to ruminative thoughts. She described how she was “stuck on the images” that were “just repeating over and over”, without “going anywhere”. (See 4.3, page 149 for full transcript). The string of thoughts began with retrieval of consecutive specific memories. Then she moved to more general reflections about how cruel the world was. As she became stuck, her responses became more general: the images were no longer described in detail. Had her rumination been an attempt to avoid emotions held at the specific level of the memory network, one would have expected her to continue recalling general memories. However, she returned to the specific level of “the sounds of all the shouting around the reporter”. In addition, for “avoidance of emotions” to be a sufficient explanation for over generality, one would expect that emotions would only be generated within the specific level of the memory structure. In the depressed group 7% of the general memory units (n = 214) and 3% of the specific memory units (n = 78) related to their experience of an emotion. In the control group 6% of the general memory units (n = 153) and 4% of the specific memory units (n = 116) related to their experience of an emotion. Sections of transcripts from participants 12 and 14 are reproduced in consideration of this:

Participant 12: section of response to cue word “sad”

“...July the 9th last year not July just gone, when my dog died, um, I was devastated. Um, it’s an incredible sense of loss and being overwhelmed by the power, power of my emotions as well, which was, which were unexpected in some ways. The intensity of er, of what I felt at the time, and that it lasted for such a long time the sense of loss ...”

Participant 14: section of response to cue word "sad"

"... sitting in my kitchen, I've got a big kitchen with a tiled floor, and crouching down in the corner because it was the only safe place, it felt safe, and swallowing a bottle of pills and feeling totally desolate, and sad um, and all I can remember is that the sun was shining outside. A cold day, but the sun was shining outside"

During both of these responses the participant concerned was recalling memories that could be expected to be upsetting. However, the first transcript is markedly less specific than the second; it contains less detail and conjures up less of an image for the recipient. Even without coding the transcripts, in reading the two extracts, it is easier to picture participant 14 sitting in the kitchen, swallowing tablets, than the scene surrounding participant 12. Although participant 12 is working at the general level and 14 is at the specific level, both are recalling their emotional experiences. Further, if the bias towards over general responses in depressed participants were to be as a result of avoidance, one would expect participant 12 to be depressed because the responses are general. One would expect the specificity of participant 14 to indicate that she belonged to the control group. The groups to which the above participants belonged were not as would have been expected for an avoidance explanation to be supported: Participant 12 was in the control group, and scored within the minimal range on the BDI (score = 8) and participant 14 was in the depressed group and scored within the mild range on the BDI (score = 18). Further, all participants (that is, regardless of whether they were depressed or controls) produced at least one memory of an emotion that they had experienced. Ten percent of all memory units contained reference to an emotion: 292 of the 2928 units in the depressed group, compared with 269 out of 2678 in the comparison group.

Another finding that mitigates against the avoidance of emotions hypothesis is the association between semantic and episodic memory structures. The literature review suggested that the episodic-semantic distinctions were useful for research purposes (Squire et al 1998). However, Squire et al (1998) acknowledge that there was evidence that the 2 domains were related. The current study found that participants regularly moved between the two types of long term memory. For example, in the discussion about the use of search enquiries (subsection 4.3.1). Participant 31 explained why her search was unsuccessful. In doing this, she gave her definition of "safe". She moved from episodic recollections to her

semantic memory and gave the *meaning* of the word. Similarly, the function of specific-general pairs in summarising the *meaning* of events was discussed (subsection 4.3.4.2). This was illustrated by participant 15's transcript. Again, this adds weight to the argument that the distinction between episodic and semantic memory may be beneficial for research purposes. However, in practice, when performing cognitive tasks, they are inextricably linked.

The findings support Brewin's (2001) assertion that meaning evokes emotions (Brewin, 2001). For example, if the meaning of an event is interpreted as showing that the individual is useless, s/he may experience feelings of guilt or shame. Since there are connections between the semantic and episodic memory systems, remaining at the general level would not prevent the generation of emotions. Thus, the emotional avoidance hypothesis as an explanation for over generality is not supported by this study.

4.4.2 The role of rumination

Both depressed and control groups failed to produce a specific memory some of the time. Recently there has been a lot of interest in rumination (Papageorgiou and Wells, 2003). For example, Lavender et al (2004) explored the role of rumination in cognitive processing in depression.

Participant 11 (above) who explicitly referred to her ruminations, was in the control group. Indeed, the current study found that ruminative processes were not restricted to the depressed group. Ruminations are long strings of associations (Beck, 1967). For rumination to explain over generality, one would expect analysis to demonstrate consecutive general-general pairs. General-specific and specific-general pairs are markers of navigation around the hierarchy, and specific pairs meet the task demands. General-general pairs, therefore, indicate a failure to move down the hierarchy. They point, therefore, to ruminative processing. General-general pairs made up 41% of the total pairs produced by the control group. It could be argued, therefore, that the controls were ruminating much of the time.

The relationship between over generality, rumination and depression appears complex. A quantitative study of the role of rumination was carried out by Watkins et al (2001). Rumination was described as involving two factors: self-focus and a

self-evaluative cognitive style. Distraction on the other hand involved low self-focus and low analytical cognitive style. These variables (self-focus and analytic thinking) were manipulated and over general memory was measured as a dependent variable. Distraction reduced over general memory. In addition, there was a significant effect found for self-evaluative analytic thinking, but not self-focus. Self-focus was found to be associated with low mood, whilst analytic thinking was associated with over generality. The authors concluded that the underlying cognitive processes involved in depression are different from those involved in over generality. Since the instructions differed for distraction and rumination tasks and there was no comparison group, the authors acknowledged that further research was required.

Rumination has been shown to reduce the ability to problem solve in depression (Watkins and Baracaia, 2002). It has also been associated with hopelessness in depression (Andersen and Limpert, 2001; Lavender et al 2004). The clinical implications of these findings are discussed below. The methodology used in those studies is relevant here. Most studies induced rumination in their participants before exploring its effect on cognitive processing. The current study found that, even without manipulating thinking, both depressed and control groups ruminate. It is suggested, therefore, that there are other factors that mediate between depression, rumination and over general thinking. For example, Watkins et al's (2001) study found that ruminative thinking interacted with an analytic thinking style to influence over general memory.

The current study used methodology that adds qualitative data in support of the wealth of quantitative research available. The definition and measurement of rumination in the current study differs from that of Watkins et al (2001). Nonetheless, the theoretical explanations are similar. The current study predicates that rumination is involved in over generality in depression. Both studies suggest that ruminative processes and their effect on memory retrieval are not straightforward. Indeed, the results of this study cannot rule out the role of task demands. Participants were being asked to find a specific memory, but research has shown that they have difficulty doing this. The relationship between specificity and retrieval processes in cued recall has been observed, but not explained.

In terms of the overarching research question, this study explored the retrieval process. However, it does not answer the question why people with depression produce fewer specific memories than controls. Two competing hypotheses remain: that rumination produces a bias towards over generality; or that a characteristic of the task demands results in a failure to meet the requirements.

Further research and modification of the free recall task are required to rule out the role of task demands as a cause for that over generality. In exploring ruminative processes, further explanations of how they impact upon memory retrieval may become evident. Recommendations for future research are discussed below.

Despite the need for further research, this study has implications for the individual and for the treatment of depression.

4.5 Implications of the study

Distortions in thinking processes hold implications for the individual. The main consequences of a failure to access specific memories for the individual relate to the self-concept and problem solving. These implications are discussed in turn, followed by consideration of the effect of these on treatment, from diagnostic processes to the likelihood of relapse. The clinical (psychotherapeutic) implications are discussed in the critical review (Akande, 2004).

4.5.1. The self-concept and negative thinking

Cognitive models of depression suggest that information from early experiences result in the formation of dysfunctional assumptions (Beck, 1967). Further, Teasdale's (1988, in Segal, Williams and Teasdale, 2002) differential activation hypothesis associates mood and negative thinking. This model suggests that there is a learnt association between mood and negative thinking. As a result, low mood brings about negative thinking. The reverse is also implicated: an event that is interpreted negatively results in a reduction in mood.

Pyszczynski and Greenberg (1987, in Watkins et al 2001) state that depression is characterised by loss. Further, feelings of hopelessness are characteristic of depression (Beck 1967). It may be that where the individual is unable to retrieve specific memories s/he may over generalise the meaning of events. For example, s/he may conclude that there are no examples of feeling safe, or s/he always feels

lonely or sad. This may explain why, in clinical practice with depressed clients, it is not unusual to find that the client holds a view of the self as useless.

An example of a dysfunctional assumption could be “I will fail if I try to change”. In order to change unhelpful beliefs, the therapeutic process directs the client’s attention to events that demonstrate an alternative perspective. For example, there may be an event where the client successfully completed a task, or was relied on by a friend or family member. However, Williams et al (1996) noted that people with depression have difficulty imagining the future. In addition, rumination increases negative thinking (Lyubomirsky and Nolen-Hoeksema, 1995; Watkins et al, 2000; in Lavender et al 2004). It may be that if the individual is unable to move from inter-connected (negative) memories, challenges to one dysfunctional assumption are unlikely to impact upon all the other assumptions that are being concurrently activated. The individual could argue that s/he was not useless in that one situation, but had failed in all the other situations that are categorised under the general theme that is being recalled.

Negative thinking may influence both perceptions of the past and thoughts about the future. Ehlers and Clark (2000) suggest that the negative appraisal of an event may be over generalised, resulting in exaggerated predictions of future negative events, that is, everything becomes a potential threat. This would explain both poor self concept and increased risk of suicide. Lavender et al (2004) found that, by comparison to distraction, rumination influenced prospective cognitions. Most significantly, they found that it resulted in more pessimism, that is, there was an increase in negative future thinking. The authors suggest that pessimism may be associated with feelings of hopelessness which in turn are associated with parasuicidal behaviours.

4.5.2 Problem solving

Goddard et al (1996) found that depression was associated with deficits in interpersonal problem solving. Ross (1984) suggests that individual memories direct problem solving. An over general response style will reduce the potential solutions to novel problems generated. The number of potential solutions is maximised by being able to think of as many consequences of actions as possible. One needs to be able to consider what has worked in, in what circumstances and what has not worked, in what circumstances. For example, in carrying out a piece

of DIY, one might believe that only a screwdriver can be used to remove screws. In order to find out where the screwdriver was left, the memory search may therefore be directed to find memories where the screwdriver was last used. Such a search would not direct the person to other tools that could be used (a knife, or a metal ruler, for example). These alternative search enquiries would be necessary if the screwdriver could not be found, or it was the wrong size. Kolodner and Simpson (1986) state

“experience contributes to refinement and modification of reasoning processes. Successful experiences reinforce already known rules or previous hypotheses, whereas failures require reanalysis of the reasoning and knowledge that was used, and modification of faulty rules and knowledge [thus] Individual experiences act as exemplars upon which to base later decisions.” (cited on pages 99 – 100).

Once again, the role of rumination may be fundamental: “failures require reanalysis”. Williams and Teasdale (2001) suggest that the perpetual failure to resolve problems may result in an analytic evaluative focus. Unresolved problems are continually reviewed in an effort to find solutions. In support of this, Williams and Teasdale (2001) draw attention to studies that have shown that overgenerality continues despite a remission in depressive symptoms (Brittlebank et al, 1993; Mackinger, Pachinger, Leibetseder and Fartacek, 2000, in Williams and Teasdale, 2001). They conclude that analytic thinking influences categoric memory, whereas self focused thinking influences mood.

4.5.3 Diagnosis

The difficulty in retrieving specific memories is not referred to explicitly in current diagnostic measures (DSM-IV and ICD-10). The potential for overlooking the problems over generality causes are likely, therefore, from the outset of contact with clinical services. The oversight may occur at any stage from diagnosis onwards. The decision making process requires both objective measures (such as measurement of weight loss) and corroborative evidence from others. Cognitive changes are acknowledged by reference to diminished thinking abilities. However, the emphasis on the individual’s recall for the preceding 2 weeks may be problematic. Over generalisation may result in an over estimation of the problems the individual perceives s/he has. This may make the individual feel more hopeless about the future and increase the severity of the depression.

For the assessing clinician, the over generalisation may create the impression that the impact of depression on everyday functioning is greater and increase the likelihood of diagnosis and treatment. However, overlooking the over generalisation allows clinical professions to continue to view depression as an affective disorder (Beck, 1967) and reduces the likelihood that treatment will address the “attentional-motivational” deficit that is the main cause of poor performance (J. P. Schaie, 1976, in Lezak, 1983). As a result, the individual may not receive the help needed to resolve his/her problems. This points to the importance of a psychological formulation of the individual’s difficulties. This is discussed further in the critical review.

4.5.4 The likelihood of relapse

Over generality is associated with a poorer prognosis (Brittlebank et al 1993). Indeed, the learnt association between mood and thinking style (Teasdale, 1988, in Segal, Williams and Teasdale, 2002) must be addressed if relapse is to be prevented. Segal and Ingram (1994, in Clark and Beck, 1999) review research relevant to the differential activation hypothesis. The review suggested that negative mood had a greater impact upon previously depressed individual’s thinking, than never-depressed thinking. It is suggested, therefore, that the association between thinking and mood increases the likelihood of a relapse into depressive symptoms (Clark and Beck, 1999). Again, this points to the importance of psychological treatments. In particular, those that incorporate psychological and biological symptoms of depression into the treatment plan.

4.6 Limitations and recommendations

4.6.1 Limitations

Limitations in relation to methodological issues are considered here. Limitations with regard to clinical practice are addressed in the critical review.

4.6.1.1 Sampling issues

It was not possible to establish the exact response rate for this study as it is not clear how many service users were given participant information sheets. This is discussed in more detail in the critical review. Forty seven participant information sheets were given to clinicians. As one emailed response and 17 posted consent forms were returned to the researcher, the response rate was approximately 38%.

Convenience sampling was used to recruit participants to the control group. Again, this is discussed in detail in the critical review. The methods of recruitment and response rates may have introduced bias in the sampling process. It is possible that two groups are not representative of the clinically depressed or general populations. Further research is needed to assess the generalisability of these results (see subsection 4.6.2).

4.6.1.2 *Design*

Participants were allocated into groups by the researcher according to whether they had a diagnosis of depression or not. As such, the researcher was not blind to the group allocation. It is possible that the method of recruitment and group allocation may have influenced the researcher, who also presented the test data (see below). There are other potential biases introduced because of the emphasis on psychiatric diagnosis. The problems of a threshold approach to diagnosis (such as the DSM-IV and ICD-10) were discussed in the introduction (see section 1.2). It was suggested that the descriptive nature of diagnostic systems focus on the systematic categorisation of people, rather than their psychological experiences. The results of this study also suggest that the cognitive sequelae of depression may result in a distorted appraisal of the consequences of that depression. The Beck Depression Inventory was included as a screening measure in an effort to minimise the effect of problems introduced by the psychiatric diagnostic process. As this is a self-report measure, it may also be susceptible to the effect of cognitive distortions in depression. However, it is a standardised measure that is commonly used both in clinical practice and in psychotherapy research (for example, Watkins et al 2001; Lavender et al 2004). It would be important to consider how this procedure could be modified in future research (see section 4.6.2).

Some socio-demographic variables were matched (gender, living with a partner). However, the groups were not matched on other demographic variables. It is possible that the difference between the groups were due to an extraneous variable that was not measured or controlled for. For example, on average, the depressed group were 14 years older than the comparison group and there is a recognised association between decreased memory functioning and ageing (Lezak, 1983). This study found that the age difference between the groups did not have a significant effect on overall memory production on the standard

recall task. However, the free recall results are less clear. Age was a cofounder.

Studies have examined the distribution of memories across the lifespan. That is, the ability to recall contextual information about events that occurred in different periods of one's life. However, there is currently no published literature that systematically compares specificity across different age groups using the cued recall method.

The effect of normal ageing on recall has been studied using a semi-structured autobiographical questionnaire by Piolino, Desgranges, Benali and Eustache (2002). This study compared recall of episodic and semantic memories. The latter being broadly consistent with the current study's definition of a general memory. They found that both episodic and semantic information gradually declined after the age of 60. Not all contextual information was lost during the ageing process. Rather, there was a process common amongst all age groups that resulted in the consolidation of information, the forgetting of specific contextual (event) details and a more general "semanticised" memory. The reduction in episodic recall may have been due to an increase in the retention period. That is, a 70 year old participant has to remember an event that happened in his/her 40s for 30 years, whilst a 50 year old only has to remember it for 10 years. Further, Piolino et al suggest that episodic memories are consolidated. This is taken to equate with the loss of contextual details. However, an alternative explanation may be that participants were using search enquiries that were not sufficiently powerful to distinguish between events.

Whilst Piolino et al's study contributes towards an understanding of some of the processes involved in normal ageing and memory retrieval, there are 2 fundamental differences between it and the current study's methodologies. Piolino et al controlled the retention period, or the length of time that participants had to remember the information, and placed less emphasis on the number of memories recalled. Participants recalled any memory (that is, not related to any particular cue word) that occurred within the 4 specified time periods (such as the 1960's). Because of these differences, it is not possible to identify the impact of ageing on cued recall. Further, it is not clear why ageing influenced the free, but not the standard recall task. Future research should systematically compare specificity across different age groups whilst controlling the period over which the memories

have been retained.

A further methodological constraint was the order of presentation of the experimental tasks. The order was not randomised. The free recall task was believed to be more challenging, therefore, the standard recall task was presented first. It was believed that task one would introduce participants to the process of retrieving specific memories. However, fatigue or practice effects could have differentially effected the two tasks. If the free recall task had been presented first, participants may have had more cognitive resources with which to perform the task. Alternatively, as the free recall task allowed more time, it may have provided opportunity for them to practice accessing specific memories. As a result, they may have been more successful at retrieving specific memories if the standard recall task had been presented second.

The standardised nature of the testing aimed to reduce experimenter biases. Instructions were transcribed and read verbatim to each participant. Each participant was given practice words. This provided opportunity to clarify any misunderstandings. During the practice words the researcher was able to check that the respondent were able to perform the tasks. This also served to reduce participant's anxiety about whether they could complete the tasks. The practice phase prepared respondents for the experimental phase, when the researcher would offer as little interaction as possible. Ericsson and Simon (1993, in Green and Gilhooly, 1996) suggested that the presence of a tape recorder and/or interviewer may influence task performance. Since the majority of participants were visited at home, it was not possible to leave them alone to complete the think aloud task. To control for this, the researcher was careful not to engage in conversation with respondents whilst they were recalling a memory. For example, where possible, when a respondent asked for clarification the instructions were reiterated ("recall a specific time when you were + *cue word*"). Replies to respondents' direct questions were as brief as possible. For example, for the cue word "cruel", participant 30 asked "is that physically or mentally or either?". The researcher replied "either" and did not offer any further explanation or examples of appropriate responses. On the standard recall task, the only prompt given was to provide a specific date for the event. Participants were not asked to elaborate on their responses. During the retrieval process, the typed cue word was placed in front of the participant. This prompted participants to search for a memory in

relation to that cue without the researcher needing to talk. In the free recall task, participants were prompted if they stopped talking. This was done by enquiring “what else do you remember?” Further consideration of ways to reduce experimenter bias are discussed below (subsection 4.6.2).

In the introduction (1.6.2), it was suggested that over general memory responses were state dependent (Wessel et al, 2001). However, Teasdale’s differential activation hypothesis (1988, in Segal, Williams and Teasdale, 2002) suggests that mood state and thinking style are reciprocal. The current study explored the relationship between people with a current diagnosis of depression. It did not investigate specificity in people who had recovered from a depressive episode. Further research could explore differences between current and remitted depression.

Emotional strooping, or mood induction, are also relevant here. It is possible that the assessment of mood by way of the BDI primed depressive thinking (Bargh, 1989, in Lavender and Watkins, 2004). In addition, the BDI focuses on one’s experiences over the last 2 weeks. As a result, it may have increased self-focus (Watkins, Teasdale and Williams, 2000). It may be, therefore, that an element of priming took place during the screening stage. As screening and data collection took place in one sitting for all but one of the participants, this may have influenced the results. Mood induction might increase the dysphoric mood and facilitate the control of variables, however, external validity may be compromised (Kendall, Flannery-Schroeder, and Ford, 1999). It may be that mood induction prior to presentation of the cue words produces larger differences between the groups. Alternatively, mood induction might interfere with recall ability generally. The impact of emotional strooping could be explored by future research (see subsection 4.6.2).

4.6.1.3 Analysis

The current study did not explore whether the rate of over generality was influenced by cue word valence. It did not compare responses to positive cue words with responses to negative cues. The current study aimed to reduce the impact of experimenter bias by presenting cues both visual and orally. Further, effort was made to ensure that the researcher’s vocal tones did not differ between the reading of positive and negative cue words.

Similarly, differences in processing speed were not investigated. Two differences between groups have been measured in previous studies (for example, Williams and Scott, 1988): response times between groups; and differences in speed of response to positive or negative cue words. The literature review (subsections 1.6.2 and 1.6.3) suggests that research in this area has produced conflicting results. This study cannot contribute to an understanding of the role of processing speed in depression. Future research could, therefore, explore the relationship between cue valence and speed of recall on specificity.

Knowledge of theoretical processes influenced how the free recall data were analysed. However, since this method has now been shown to be an appropriate bridge between quantitative and qualitative methods, alternative methods of data analysis may be used. For example, future research could use content analysis to establish the rate of positive and negative autobiographical memories produced by each group and whether the rate of production differs between general and specific memory units.

4.6.1.4 Recall tasks

The inability to scrutinise the retrieval process in standard recall tasks and the difficulty coding memory units in the free recall task have been discussed. The combination of the two methods enhanced the generalisations that can be made from the current study. Gilhooly and Green (1996) suggest that data from think aloud tasks represents current activity in memory processing. Indeed, the qualitative features of the data produced in free recall enabled observation of the retrieval process. In addition, the cognitive demands made by the standard cued recall task are relatively uncomplicated. It is a fairly simple task that does not necessitate complex judgements about the meaning of memories, as would be expected in decision making and problem solving in everyday life. Although there are recommendations regarding potential improvements to the methodology (below), the inclusion of a free recall task increases this study's ecological validity. It placed cognitive demands on the respondents similar to those experienced in everyday life. Respondents were required to hold several pieces of information in mind concurrently and for a longer time than in standard recall tasks. They had to remember the cue word and to talk continuously for 2 minutes, whilst searching for a specific memory.

Despite the difficulty in coding the transcripts of the free recall task, hypothesis 4 could be explored using “specific” and “general” categories. The aim of this hypothesis was to establish whether depressed participants were more likely to experience an aberration at the general level of the hierarchy during the retrieval process. That is, would they move horizontally and fail to move vertically around the hierarchy. In this respect, the problem coding data from the free recall task did not prevent the current study from exploring the retrieval process. However, further research could investigate the frequency of extended and categoric memories.

4.6.2 Recommendations for future research

In the discussion of the limitations of the current and previous findings, suggestions for future research have already been made. These will be summarised here.

Modifications to the current methodology in future research could promote the generalisation of the findings to a larger target population. In particular, consideration of the mode of recruitment would be important. The involvement of independent researchers would reduce experimenter bias. For example, a double-blind design could be adopted. It is recommended that future research splits the methodological tasks of group allocation and coding memories. These task should be carried out by a researcher who is not involved in defining the hypotheses that are being tested.

In addition, the generalisability of the results would be improved by using a matched-pair design. This would control for participant variables. In addition, a split half methodology could be used. This would require the two tasks to be split in half, resulting in 4 experimental tasks: 2 standard cue recall tasks (with 10 cue words in each) and 2 free recall tasks (with 2 cue words in each). The subsequent variation in the order of presentation of tasks would reduce the confounding effects of practice and fatigue on specificity.

The problems of psychiatric diagnosis have already been discussed. Those individuals who fall short of the criteria for a clinical diagnosis may still have functional difficulties in consequence of their low mood. This group of individuals may or may not differ from those who have a psychiatric diagnosis of depression.

Further, diagnosis relies heavily on the individual's report of his/her problems. The distortion in autobiographical recall experienced in depression may influence the diagnostic process. It would be interesting for future research to investigate this. Also relevant to this area are the impact of remitted depression and emotional strooping. For example, the clinical interview may be perceived by the interviewee as a positive or negative encounter (see critical review, Akande, 2004). This may have an effect on the individual's mood. Teasdale's differential activation hypothesis (1988, in Segal et al Teasdale, 2002) suggests that this would result in changes in the individual's recall.

It has been suggested that the qualitative nature of the free recall task complements the quantitative data from the standard task. It is recommended that future research continues to bridge the gap between experiments that demonstrate relationships between variables and observations of how those variables interact. Such methodological eclecticism will enhance the theoretical inferences that can be made from future research. In order to advance the contribution of free recall tasks in understanding memory processes, adaptations to the coding or data collection stages may be appropriate. The current study was unable to distinguish between extended and categoric responses to the task. The literature review suggested that extended memories are more distinct and older than categoric memories (Williams, 1996). This could be explored. For example, respondents could be asked to rate their own memory units once the data has been collected. Alternatively, the researcher could ask probing questions to elicit temporal details of each memory, after the think aloud data had been collected.

In addition, this study and others (Lavender et al 2004; Watkins et al 2001) have implicated the role of rumination. However, it is not possible to refute a competing hypothesis. Task demands may be confounding findings of over generality. This study did not explore the relationship between the frequency of task related utterances and general memories. Further research could use statistical and content analysis of task related utterances to explore the relationship of task characteristics to the frequency of over general memories.

Finally, the current study did not investigate differences between positive and negative cue words. Similarly, it did not explore differences between the groups in terms of the speed with which they recalled memories. Research findings related

to these variables are conflicting. Future research could explore the role of these variables.

4.7 Conclusions

The study compared memory processes between depressed and non-depressed participants. It expanded on previous research within this area that has investigated memory specificity in depression. It is acknowledged that aspects of the design could be improved in future research. However, the findings showed that people with depression are more likely to produce over general responses on cued recall tasks. An aberration in the retrieval process at the general level of the memory network was observed. The cued recall tasks have been shown to tap into a cognitive anomaly experienced by people with depression.

The clinical implications of this study are wide ranging. Over general memory recall may impact upon individuals' sense of self, their success at solving problems and their perception of their future. Clinicians must consider the impact of over generality on the individual and on diagnostic processes. In addition, clinicians must adapt their practice to improve the efficacy of the therapeutic process. In doing so, clinicians can reduce the impact of cognitive distortions on the therapeutic process and reduce the likelihood of relapse.

WORD COUNT 28,021

ACKNOWLEDGEMENTS

Firstly, I would like to express my great appreciation to all the participants who took part in the study for the benefit of others in the future.

I would like to thank Anna Marley and all the clinicians who helped during the recruitment stage.

In addition, thanks go to members of the Course Team. In particular, my supervisor, Steve Davies, and research tutor, John Done for their careful consideration of drafts and guidance throughout the research process. I am grateful to Joerg Schultz for his advice on statistics.

Finally, thank you to my family and friends for being understanding and supportive over the last 3 years.

REFERENCES

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders, 4th edition: DSM-IVTM*. Washington: American Psychiatric Association.

Andersen, S.M., & Limpert, C. (2001). Future-event schemas: Automaticity and rumination in major depression. *Cognitive Therapy and Research*, 25, 3, 311 – 333.

Arnz, A., Meeren, M., & Wessel, I. (2002). No evidence for overgeneral memories in borderline personality disorder. *Behaviour Research and Therapy*, 40, 1063 – 1068.

Atkinson, R.C., & Shiffrin, R.M. (1971). The control of short-term memory. *Scientific American*, 225.

Baddeley, A.D. (1986). *Working memory*. Oxford: Oxford University Press.

Baddeley, A.D. (1997). *Human memory: theory and practice* (revised). Hove: Psychology Press.

Barker, C., Pistrang, N., & Elliott, R. (2002). Research methods in clinical psychology: an introduction for students and practitioners, 2nd edition. Chichester: John Wiley & Sons, Ltd.

Barnhofer, T., de Jong-Meyer, R., Kleinpaß, A., & Nikesch, S. (2002). Specificity of autobiographical memories in depression: An analysis of retrieval processes in a think-aloud task. British Journal of Clinical Psychology, 41, 411 – 416.

Barsalou, L.W. (1988). The content and organization of autobiographical memories. In U. Neisser & E. Winograd (Eds.), Remembering reconsidered: ecological and traditional approaches to the study of memory. (pp. 193 – 243). New York: Cambridge University Press.

Basso, M.R., & Borstein, R.A. (1999). Relative memory deficits in recurrent versus first-episode major depression on a word-list learning task. Neuropsychology, 13, 557 – 563.

Beck A.T. (1967). Depression: causes and treatment. Philadelphia: University of Pennsylvania Press.

Bental, R.P., & Kaney, S. (1989). Content-specific information processing and persecutory delusions: an investigation using the emotional Stroop test. British Journal of Medical Psychology, 62, 355 – 364.

Bilder, R.M., Goldman, R.S., Robinson, D., Reiter, G., Bell, L., Bates, J.A., Pappadopulus, E.L., Willson, D.F., Alvir, J.M.J., Woerner, M.G., Geisler, S., Kane, J.M., & Lieberman, J.A. (2000). Neuropsychology of first-episode schizophrenia: initial characterization and clinical correlates. American Journal of Psychiatry, 157 (4), 549 – 559.

Brewer, W.F. (1996). What is recollective memory? In D.C. Rubin (Ed.), Remembering our past: studies in autobiographical memory. (pp.19 – 66). Cambridge: Cambridge University Press.

Brewin, C.R. (2001). A cognitive neuroscience account of posttraumatic stress disorder and its treatment. Behaviour Research and Therapy 39, 373 – 393.

- Brewin, C.R., Dalgleish, T., & Joseph, S. (1996). A dual representation theory of posttraumatic stress disorder. Psychological-Review 103, 4, 670 – 686.
- Brewin, C.R., Reynolds, M., & Tata, P. (1999). Autobiographical memory processes and the course of depression. Journal of Abnormal Psychology, 108, 511 – 517.
- Brewin, C.R., Watson, M., McCarthy, S., Hyman, P., & Dayson, D. (1998). Intrusive memories and depression in cancer patients. Behaviour Research and Therapy, 36, 1131 – 1142.
- Brittlebank, A.D., Scott, J., Williams, J.M.G., & Ferrier, I.N. (1993). Autobiographical memory in depression: State or trait marker? British Journal of Psychiatry, 162, 118 – 121.
- Christianson, S.A., & Safer, M.A. (1996). Emotional events and emotions in autobiographical memories. In D.C. Rubin (Ed.), Remembering our past: studies in autobiographical memory. (pp.218 – 243). Cambridge: Cambridge University Press.
- Clark, D.A., & Beck, A.T. (1999). Scientific Foundations of Cognitive Theory and Therapy of Depression. Chichester: John Wiley and Sons, Inc.
- Cohen, J. (1992). A power primer. Psychological Bulletin, 112,1, 155 – 159.
- Conway, M.A. (1996). Autobiographical knowledge and autobiographical memories. In D.C. Rubin (Ed.), Remembering our past: studies in autobiographical memory. (pp.67 – 93). Cambridge: Cambridge University Press.
- Conway, M.A., & Bekerian, D.A. (1987). Organization in autobiographical memory. Memory Cognition, 15, 119 – 132.
- Craik, F.I.M. (1994). Remembering as a mental activity. The Psychologist, 257 – 258.

Data Protection Act. (1998). London: HMSO.

Eells, T.D., Horowitz, M.J., Stinson, C.H., & Fridhandler, B. (1993). Self-representation in anxious states of mind: a comparison of psychodynamic models. In Z.V. Segal & S.J. Blatt (Eds.), The self in emotional distress: cognitive and psychodynamic perspectives. (pp. 100 – 122). New York: Guildford Press.

Ehlers, A., & Clark, D.M. (2000). A cognitive model of posttraumatic stress disorder. Behaviour Research and Therapy, 38, 319 – 345.

Fennell, M. (1989). Depression. In K. Hawton, P.M. Salkovskis, J. Kirk, & D.M. Clark (Eds.), Cognitive Behaviour Therapy for Psychiatric Problems: a practical guide. (pp. 169 – 234). Oxford: Oxford University Press

Foa, E.B., Molnar C., & Cashman L. (1995). Change in rape narratives during exposure therapy for posttraumatic stress disorder. Journal of Trauma Stress, 8, 4, 675 – 690.

Foa, E.B., & Hearst-Ikeda, D. (1996). Emotional dissociation in response to trauma: an information processing approach. In L.K. Michelson & W.J. Ray (Eds.), Handbook of dissociation: theoretical and clinical perspectives. (pp 207 – 222). New York: Plenum Press.

Gilhooly, K., & Green, C. (1996). Protocol analysis: theoretical background. In Richardson, J.T.E. (Ed.), Handbook of qualitative research methods for psychology and social sciences. (pp 43 – 54). Oxford: BPS Blackwell.

Goddard, L., Dritschel, B., & Burton, A. (1996). Role of autobiographical memory in social problem solving and depression. Journal of Abnormal Psychology, 105, 609–616.

Greene, J. & D'Oliveira, M. (1993). Learning to use statistical tests in psychology. Milton Keynes: Open University Press.

Green, C., & Gilhooly, K. (1996). Protocol analysis: practical implementation. In Richardson, J.T.E. (Ed.), Handbook of qualitative research methods for psychology and social sciences. (pp 55 – 74). Oxford: BPS Blackwell.

Harvey, A.G., & Bryant, R.A. (1999). Brief report: A qualitative investigation of the organization of traumatic memories. British Journal of Clinical Psychology, 38, 401 – 405.

Harvey, A.G., Bryant, R.A., & Dang, S.A. (1998). Autobiographical memory in acute stress disorder. Journal of Consulting and Clinical Psychology, 66, 500 – 506.

Hayes, P., Conway, M.A., & Morris, P.E. (1992). Evaluating the cognitive structure of emotions using autobiographical memories of emotional events. In M.A. Conway, D.C. Rubin, H. Spiner & W.A. Wagenaar (Eds.) Theoretical perspectives on autobiographical memory. (pp. 353 – 374). Dordrecht: Kluwer.

Hellawell, S., & Brewin, C. (2004). A comparison of flashbacks and ordinary autobiographical memories of trauma: content and language. Behaviour Research and Therapy, 42, 1 – 12.

Kendall, P.C., Flannery-Schroeder, E.C., & Ford, J.D. (1999). Therapy outcomes research methods. In Kendall, P.C., Butcher, J.N., & Holmbeck, G.N. (Eds.), Handbook of Research Methods in Clinical Psychology, 2nd edition. (pp. 330 – 363). Chichester: John Wiley & Sons, Inc.

Kirk, S., Kutchins, H., & Rowe, D. (2003). Making us crazy: DSM – the psychiatric bible and creation of mental disorders. London: Constable & Robinson Ltd.

Klein, D.N., Riso, L.P., Donaldson, S.K., Schwartz, J.E., Anderson, R.L., Ouimette, P.C., Lizardi, H., & Aronson, T.A. (1996). Family study of early onset dysthymia: Mood and personality in relatives of outpatients with dysthymia and episodic major depression and normal controls. Archives of General Psychiatry, 52, 6, 487 – 496.

Kolodner, J.L., & Simpson, R.L. (1986). Problem Solving and Dynamic Memory. In Kolodner, J.L., & Reisbeck, C.K. (Eds.), Experience, Memory, And Reasoning. (pp. 99 – 114). London: Lawrence Erlbaum Associates.

Kuyken, W., & Brewin, C.R. (1995). Autobiographical memory function in depression and reports of early abuse. Journal of Abnormal Psychology, 104, 585 – 591.

Kuyken, W., & Dalgleish, T. (1995). Autobiographical memory and depression. British Journal of Clinical Psychology, 34, 89 – 92.

Lavender, A., & Watkins, E. (2004) Rumination and future thinking in depression. British Journal of Clinical Psychology, 43, 2, 129 – 142.

Lezak, M.D. (1983). Neuropsychological Assessment, 2nd edition. Oxford: Oxford University Press.

Marx, E. M., Williams, J. M. G., & Claridge, G. C. (1992). Depression and social problem solving. Journal of Abnormal Psychology, 101, 78 – 86.

Marzillier, J. (2004). The myth of evidence-based psychotherapy. The Psychologist, 17, 7, 392 – 395.

McNally, R.J., Lasko, N.B., Macklin, M.L., & Pitman, R.K. (1995). Autobiographical memory disturbance in combat-related posttraumatic stress disorder. Behaviour Research and Therapy, 33, 6, 619 – 630.

McNally, R.J., Litz, B.T., Prassas, A., Shin, L.M., & Weathers, R.W. (1994). Emotional priming of autobiographical memory in posttraumatic stress disorder. Cognition and emotion, 8, 351 – 367.

Meek, P.S., Clark, H.W., & Solana, V.L. (1989). Neurocognitive impairment: the unrecognised component of dual diagnosis in substance abuse treatment. Journal of Psychoactive Drugs, 21, 2, 153 – 160.

Moore, R.G., Watts, R.N., & Williams, J.M.G. (1988). The specificity of personal memories in depression. British Journal of Clinical Psychology, 27, 275 – 276.

Morgan, M.J. (1999). Memory deficits associated with recreational use of “ecstasy”. Psychopharmacology Berlin, 141, 1, 30 – 36.

Nandrino, J.L., Pezard, L., Posté, A., Réveillère, C., & Beaune, D. (2002). Autobiographical Memory in Major Depression: A comparison between first-episode and recurrent patients. Psychopathology, 35, 6, 335 – 340.

National Service Frameworks for Mental Health: Modern standards and service models. (1999). London: DH Publications.

Orbach, Y., Lamb, M.E., Sternberg, K.J., Williams, J.M.G., & Dawud-Noursi, S. (2001). The effect of being a victim or witness of family violence on the retrieval of autobiographical memories. Child Abuse and Neglect, 25, 1427 – 1437.

Papageorgiou, C., & Wells, A. (2003). An empirical test of clinical metacognitive model of rumination and depression. Cognitive Therapy and Research, 27, 3, 261 – 273.

Pennebaker, J.W., Czajka, J.A., Cropanzano, R., & Richards, B.C. (1990). Levels of Thinking. Personality and Social Psychology Bulletin, 16, 4, 743 – 757.

Piolino, P., Desgranges, B., Benali, K., & Eustache, F. (2002). Episodic and semantic remote autobiographical memory in ageing. Memory, 10, 4, 239 – 257.

Power, M.J., Dalgleish, T., Claudio, V., Tata, P., & Kentish, J. (2000). The directed forgetting task: application to emotionally valent material. Journal of Affective Disorders, 57, 147 – 157.

Price, G. (2004). Letters. The Psychologist, 17, 9, 494.

Reynolds, M., & Brewin, C.R. (1999). Intrusive memories in depression and posttraumatic stress disorder. Behaviour Research and Therapy, 37, 201 – 215.

Robinson, J.A. (1996). Perspective, meaning and remembering. In D.C. Rubin (Ed.), Remembering our past: studies in autobiographical memory. (pp. 199 – 217). Cambridge: Cambridge University Press.

Ross, B.H. (1984). Reminders and their effects in learning a cognitive skill. Cognitive Psychology, 16, 371 – 416.

Roth, M., Huppert, F. A., Tym, E., & Mountjoy, C. Q. (1998). The Cambridge Examination for Mental Disorders of the Elderly. Cambridge University Press, Cambridge.

Rubin, D.C. (1986). Autobiographical memory. Cambridge: Cambridge University Press.

Rubin, D.C., Wetzler, S.E., & Nebes, R.D. (1986), Autobiographical memory across the lifespan. In D.C. Rubin (Ed.), Autobiographical memory. (pp. 202 – 221). Cambridge: Cambridge University Press.

Ryle, A. (1978). A common language for the psychotherapies? British Journal of Psychiatry, 132, 582 – 94.

Schacter, D.L., Kihlstrom, J.F., Kihlstrom, L.C., & Berren, M.B. (1989). Autobiographical memory in a case of multiple personality disorder. Journal of Abnormal Psychology, 98, 508 – 514.

Schank, R.C. (1982). Reminding and memory organisation. In W.G. Lehnert & M.H. Ringle (Eds.), Strategies for natural language processing. New Jersey: Erlbaum.

Segal, Z.V., Williams, J.M.G., & Teasdale, J.D. (2002). Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse. London: The Guildford Press.

Spence, D.P. Passive Remembering. (1988). In U. Neisser & E. Winograd (Eds.), Remembering reconsidered: ecological and traditional approaches to the study of memory. (pp. 193 – 243). New York: Cambridge University Press.

Squire, L.R., & Zola, S.M. (1998). Episodic memory, semantic memory and amnesia. Hippocampus, 8, 205 – 211.

Tulving, E. (1987). Multiple memory systems and consciousness. Human Neurobiology, 6, 67 – 80.

van Minnen, A., Wessel, I., Dijkstra, T., & Roelofs, K. (2002). Changes in PTSD patients' narratives during prolonged exposure therapy: a replication and extension. Journal of Traumatic Stress, 15, 3, 255 – 258.

Watkins, E., & Baracaia, S. (2002). Rumination and social problem-solving in depression. Behaviour Research and Therapy, 40, 10, 1179 – 1189.

Watkins, E., & Brown, R.G. (2002). Rumination and executive function in depression: An experimental study. Journal of Neurology, Neurosurgery and Psychiatry, 72, 3, 400 – 402.

Watkins, E., & Teasdale, J.D. (2001). Rumination and overgeneral memory in depression: effects of self-focus and analytic thinking. Journal of Abnormal Psychology, 110, 2, 353 – 357.

Watkins, E., Teasdale, J.D., & Williams, R.M. (2000). Decentring and distraction reduce overall autobiographical memory in depression. Psychological Medicine, 30, 911 – 920.

Wessel, I., Meeren, M., Peeters, F., Arntz, A., & Merkelbach, H. (2001) Correlates of autobiographical memory specificity: the role of depression, anxiety and childhood trauma. Behaviour Research and Therapy, 39, 409 – 421.

Wessel, I., Merckelbach, H., & Dekkers, T. (2002). Autobiographical memory specificity, intrusive memory, and general memory skills in Dutch-Indonesian survivors of World War II Era. Journal of Traumatic Stress, 15, 3, 227 – 234.

Williams, J.M., & Scott, J. (1988). Autobiographical memory in depression. Psychological Medicine, 18, 689 – 695.

Williams, J.M.G. (1984). The Psychological treatment of depression. London: Croom-Helm.

Williams, J.M.G. (1996). Depression and the specificity of autobiographical memory. In D.C. Rubin (Ed.), Remembering our past: studies in autobiographical memory. (pp.244 – 267). Cambridge: Cambridge University Press.

Williams, J.M.G., & Broadbent, K. (1986). Autobiographical memory in attempted suicide patients. Journal of Abnormal Psychology, 95, 144 – 149.

Williams, J.M.G., & Dritschel, B.H. (1988). Emotional disturbances and the specificity of autobiographical memory. Cognition and Emotion, 2, 221 – 234.

Williams, J.M.G., & Dritschel, B.H. (1992). Categorical and extended autobiographical memories. In M.A. Conway, D.C. Rubin, H. Spiner & W.A. Wagenaar (Eds.) Theoretical perspectives on autobiographical memory. (pp 391 – 410). Dordrecht: Kluwer.

Williams, J.M.G., Ellis, N.C., Tyers, C., Healy, H., Rose, G., & Macleod, A.K. (1996). The specificity of autobiographical memory and imageability of the future. Memory and Cognition, 24, 116 – 125.

Williams, J.M.G., Watts, F.N., MacLeod, C., & Mathews, A. (1997). Cognitive psychology and emotional disorders (2nd ed.). Chichester: Wiley

Williams, M.D., & Hollan, J.D. (1981). Processes of retrieval from very long-term memory. Cognitive Science, 5, 87 – 119.

World Health Organization. (1992). The ICD-10 Classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines. Geneva: WHO.

APPENDICES

- 1 Clinician information sheet
- 2 Participant information sheet
- 3 Consent form, depressed group
- 4 Consent form, control group
- 5 Ethics approval letter
- 6 R & D approval letter
- 7 Screening form
- 8 Verbatim instructions for standard recall task
- 9 Verbatim instructions for free recall task
- 10 Examples of transcripts for free recall task

APPENDIX 1
CLINICIAN INFORMATION SHEET

19th July 2004

Study on memory recall in people who are depressed

Researcher: Rachel Akande

Research supervisors: Steve Davies, John Done, Anna Marley.

Dear

I am doing a study on memory recall in people who are depressed. The study is in collaboration with The University of Hertfordshire and North Essex Mental Health Partnership NHS Trust. It complies with the strict ethical guidelines for research and is approved by the North & Mid Essex Research Ethics Committee.

This letter provides details about the research. We would like to ask your assistance in identifying appropriate service users. They should be over 18 years old, with a diagnosis of depression, and have English as their first language. Although a more thorough screening will take place, briefly they should not:

- take illicit drugs
- have excessive alcohol consumption (over the BMA advised limits)
- have a diagnosis (or suspected diagnosis) of dementia, or post traumatic stress disorder
- have had a head injury

I would be grateful if you would give the enclosed patient information sheets and consent form to any of your patients who meet the above criteria.

Reasons for this study:

The study aims to fill a gap in research on memory problems associated with depression. People who are depressed have been shown to produce over general memories. This can affect their self identity, self esteem and result in difficulties in solving problems. The current research aims to explore how this over general memory recall happens. As well as being important for the individual (who may experience this memory problem as isolating and disorientating), a greater understanding of memory processes may have important implications for therapeutic work with people who are depressed. Especially with the current trend towards cognitive therapies for depression. In addition, the research can contribute towards greater understanding of how memory works.

The study will involve the following:

Screening stage

Each participant will be visited at home (unless they would prefer to have an appointment at Oyster Court). They will be asked some background information (name, address, age etc.), and to fill out the Beck Depression Inventory, which will take approximately 10 minutes.

Data collection stage

Those participants that meet inclusion criteria and agree to participate will be visited at home. They will be asked to do two different tasks that involve recalling memories of an event that reminds them of a time when they have shown a particular personal characteristic. This is anticipated to take no more than one

hour.

Respondents will be informed that their participation is confidential and anonymous, and that they will have the right to withdraw at any stage. It will not affect the normal care that they receive from the Trust.

The study should not create any additional work for you. However, in order to recruit participants, we would be grateful for your help in distributing the information and consent letters to relevant service users. The information sheet asks those individuals who would like to participate to return their consent form to me. I will then arrange to meet them. The findings of the study will be available from Oyster Court CMHT.

If you have any questions, require further information, or wish to discuss the study in more detail, please do not hesitate to contact Rachel Akande on 07939534389, or by email to rsakande@hotmail.com.

Thank you for your assistance

Rachel Akande, Trainee Clinical Psychologist

APPENDIX 2 PARTICIPANT'S INFORMATION SHEET (service users)

Study on memory recall in people who are depressed

Study researchers: Rachel Akande Steve Davies
 Anna Marley John Done

I would like to invite you to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear, or if you would like more information.

Reasons for the study

It is difficult to study how memory works. This is because everyone's experiences are different and so it is difficult to check how accurate memory recall is. Studies have found that different strategies are used by different people and it is well known that depression can cause problems with memory. The purpose of this study is to look at how depression can effect the way that memories are recalled. There is reason to believe that the way memories are accessed might well be important in maintaining depression.

Why have I been chosen?

Service users with a diagnosis of depression within North Essex Mental Health Partnership NHS Trust have been approached to participate in this research.

Do I have to take part?

No, it is up to you to decide whether or not you wish to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. You can change your mind at any time, or decide not to answer a question, without giving a reason. This is an entirely independent study, that is not linked to your care. **A decision to withdraw or not to take part will not affect the standard of care you receive.**

What will happen to me if I take part?

You will meet with Rachel Akande, Clinical Psychologist in Training, who will ask you some background details, such as your name, address and age. You will then be asked to complete a brief screening questionnaire, which will take about 20 minutes.

You may then be visited again. In this visit you will be given a list of words and asked to remember events that remind you of each word. This is anticipated to take no more than one hour.

It is not the intention of the study to ask you to remember anything too distressing. However, if you do recall something that you find upsetting, Rachel will stop the interview. As a trainee clinical psychologist, she will be able to give you opportunity to talk about what you have remembered and why you have found it upsetting. She will help you identify what can be done to help you deal with the unhappy memory, which may include further professional help. Rachel will then ask you whether you wish to continue the interview either immediately, or after you have sought further professional help. **You will not be pressured into continuing with the study, if you do not want to.**

Will my answers be kept confidential?

Each participant will be assigned a code number in order to make sure that all information is kept confidential and anonymous. Any information about or from you, such as questionnaires or interview data, will show the numerical code. Your identifying details (name, address etc.) will be removed, so that you cannot be recognised from it. All information will be kept in a secure place. Information that you give will not be entered into your medical notes, nor lead to a change in your usual care. However, with your permission your G.P. and Consultant Psychiatrist will be sent a letter informing them of your participation in this research.

What are the advantages and disadvantages of taking part?

This study does not involve any therapeutic treatment and as such there are no advantages or disadvantages to you of taking part in this research.

What will happen to the results of the research?

The results of this study will be used for the investigator's dissertation for her Doctorate in Clinical Psychology. The results may also be published. Any information that could be used to identify you will be removed from the dissertation and from any published materials. You will be asked by Rachel Akande if you would like a copy of the results.

The results of the study may help us understand how memory works and the way that depression is maintained by memory problems. It is hoped that this understanding will improve psychological treatments by making them more effective in helping improve self esteem and self identity in depression. Improved treatment may also help people with depression to solve their problems more successfully.

Who is organising the funding for the research?

Rachel Akande is not being funded directly or being paid solely for carrying out the research. However, Cambridge and Peterborough Partnership Mental Health NHS Trust are sponsoring her Doctoral course fees (for which the present research is the main requirement).

Who has reviewed the study?

North and Mid Essex Research Ethics Committee have made sure that the study complies with the strict ethical guidelines for psychological research.

What if something goes wrong?

You are, of course, welcome at any time to express concerns or complaints about this research, or the way you have been treated using the NHS mechanisms.

Contact for further information

If you would like further information regarding this study, please feel free to contact Rachel Akande

Telephone: TBA (note: a new mobile number will be obtained, purely for use in this study)

Email: rsakande@hotmail.com

What happens next?

If you decide that you would like to take part, please send back your consent form to the above address. Rachel Akande will then ring you to arrange an appointment.

Thank you for considering participating in this study. I greatly appreciate your support.

Rachel Akande
Trainee Clinical Psychologist

APPENDIX 2
PARTICIPANT'S INFORMATION SHEET (control group)

Study on memory recall in people who are depressed

Researcher: Rachel Akande
Research supervisors: Steve Davies, John Done, Anna Marley.

I am doing a study on memory recall and am looking for people who are willing to participate as part of the control group. The study is being conducted in partnership with The University of Hertfordshire and North Essex Mental Health Partnership NHS Trust.

This letter provides details about the research. I would be grateful if you would consider taking part. If you have any questions, require further information, or wish to discuss the study in more detail, please do not hesitate to contact me (Rachel Akande) on TBA, or by email (rsakande@hotmail.com).

Reasons for this study:

It is difficult to study how memory works. This is because everyone's experiences are different and so it is difficult to check how accurate memory recall is. Studies have found that different strategies are used by different people and it is well known that depression can cause problems with memory. The purpose of this study is to look at how depression can effect the way that memories are recalled. There is reason to believe that the way memories are accessed might well be important in maintaining depression. As well as being important for the individual (who may experience this memory problem as isolating and disorientating), a greater understanding of memory processes may have important implications for therapeutic work with people who are depressed. Especially with the current trend towards cognitive therapies for depression.

Am I eligible to take part?

Any one who is over 18 years old and speaks English as their first language can consider taking part. However, the study will exclude anyone who:

- takes illicit drugs
- has excessive alcohol consumption (over the BMA advised limits)
- has a diagnosis (or suspected diagnosis) of dementia, or post traumatic stress disorder
- has had a head injury

Do I have to take part?

No, it is up to you to decide whether or not you wish to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. You can change your mind at any time, or decide not to answer a question, without giving a reason. This is an entirely independent study, that is not linked to your employment. **A decision to withdraw or not to take part will not affect the standard of care you receive.**

What will happen to me if I take part?

You will meet with Rachel Akande, Clinical Psychologist in Training, who will ask you some background details, such as your name, address and age. You will then be asked to complete a brief screening questionnaire and consent form, which will take about 20 minutes.

You may then be asked to arrange another meeting. In this second meeting you will be given a list of words and asked to remember events that remind you of each word. This is anticipated to take no more than one hour.

It is not the intention of the study to ask you to remember anything too distressing. However, if you do recall something that you find upsetting, Rachel will stop the interview. As a trainee clinical psychologist, she will be able to give you opportunity to talk about what you have remembered and why you have found it upsetting. She will help you identify what can be done to help you deal with the unhappy memory, which may include further professional help. Rachel will then ask you whether you wish to continue the interview either immediately, or after you have sought further professional help. **You will not be pressured into continuing with the study, if you do not want to.**

Will my answers be kept confidential?

Each participant will be assigned a code number in order to make sure that all information is kept confidential and anonymous. Any information about or from you, such as questionnaires or interview data, will show the numerical code. Your identifying details (name, address etc.) will be removed, so that you cannot be recognised from it. *All information will be kept in a secure place.*

What are the advantages and disadvantages of taking part?

This study does not involve any therapeutic treatment and as such there are no advantages or disadvantages to you of taking part in this research.

What will happen to the results of the research?

The results of this study will be used for the investigator's dissertation for her Doctorate in Clinical Psychology. The results may also be published. Any information that could be used to identify you will be removed from the dissertation and from any published materials. You will be asked by Rachel Akande if you would like a copy of the results.

The results of the study may help understand how memory works and the way that depression is maintained by memory problems. It is hoped that this understanding will improve psychological treatments by making them more effective in treating depression by helping people who are depressed improve their self esteem and self identity. Improved treatment may also help people with depression to solve their problems more successfully.

Who is organising the funding for the research?

Rachel Akande is not being funded directly or being paid solely for carrying out the research. However, Cambridge and Peterborough Partnership Mental Health NHS Trust are sponsoring my Doctoral course fees (for which the present research is the main requirement).

Who has reviewed the study?

North and Mid Essex Research Ethics Committee have made sure that the study complies with the strict ethical guidelines for psychological research.

What if something goes wrong?

If you wish to complain or have any concerns about any aspect of the way you have been approached or treated during the course of this study, the normal National Health Service complaints mechanisms are available to you.

Contact for further information

If you would like further information regarding this study, please contact me.

Telephone: TBA (note: a new mobile number will be obtained, purely for use in this study)

Email: rsakande@hotmail.com

What happens next?

If you decide that you would like to take part, please complete the tear off slip (below) and send it to me. I will then ring you to arrange a meeting.

Thank you for considering participating in this study. I greatly appreciate your support.

Rachel Akande
Trainee Clinical Psychologist



Please tear off this section and send it to Rachel Akande, Psychology Department, North Essex Mental Health Partnership NHS Trust, Oyster Court CMHT, St Helen's Lane, Colchester, CO1 1TY.

Study on memory recall in people who are depressed

I have read the participant information sheet, and am interested in participating in the study.

Name

Department

Telephone number

Signature

Date

**APPENDIX 3
CONSENT FORM (service user)**

Study on memory recall in depression

Please complete this form, if you wish to take part in this project.

Please tick box	YES	NO
I have read and understood the information sheet for the above study.	<input type="checkbox"/>	<input type="checkbox"/>
I have been given opportunity to ask questions.	<input type="checkbox"/>	<input type="checkbox"/>
I am happy with the answers given to any questions I have asked about the study.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that I may withdraw from the project at any time.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that I do not have to give a reason if I decide to withdraw from the study.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that withdrawal from the study will not affect the services I receive from the Trust.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that I may decide not to answer a question, without giving a reason.	<input type="checkbox"/>	<input type="checkbox"/>
I agree to take part in the above study.	<input type="checkbox"/>	<input type="checkbox"/>
I agree to my GP and Consultant Psychiatrist being informed of my participation in the study.	<input type="checkbox"/>	<input type="checkbox"/>

Signed Date.....

NAME (IN BLOCK LETTERS)

Contact telephone number:

Please ensure that you have included your contact number and send this form to Rachel Akande, North Essex Mental Health Partnership NHS Trust, Oyster Court CMHT, St Helen's Lane, Colchester, CO1 1TY

APPENDIX 4
CONSENT FORM (control group)

Study on memory recall in depression

	Please tick box	
	YES	NO
I have read and understood the information sheet for the above study.	<input type="checkbox"/>	<input type="checkbox"/>
I have been given opportunity to ask questions.	<input type="checkbox"/>	<input type="checkbox"/>
I am happy with the answers given to any questions I have asked about the study.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that I may withdraw from the project at any time.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that I do not have to give a reason if I decide to withdraw from the study.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that I may decide not to answer a question, without giving a reason.	<input type="checkbox"/>	<input type="checkbox"/>
I agree to take part in the above study.	<input type="checkbox"/>	<input type="checkbox"/>

Signed Date.....

NAME (IN BLOCK LETTERS)

Contact telephone number:

**APPENDIX 5
ETHICS APPROVAL**

26 May 2004

Miss Rachel Sarah Akande

Dear Miss Akande,

Full title of study: An exploration of memory retrieval processes in people who are depressed

REC reference number: 04/Q0303/13

Protocol number: 2

Thank you for your letter of 22 May, responding to the Committee's request for further information on the above research.

The further information has been considered on behalf of the Committee by the Acting Chairman and although approval is given as outlined below, the insertion of the words "with their consent" must be added to the last paragraph on page 7 of the protocol - ie, "If a service user believes his/her score is representative, s/he will be informed that the score suggests an improvement in their depressive symptoms. They will be informed that this information will be passed on **with their consent** to their GP The Chair would also like to commend you on the clarity of the amended documents submitted.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation.

The favourable opinion applies to the following research site:

Site: North Essex Mental Health Partnership
Principal Investigator: Miss Rachel Sarah Akande

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document Type: Application

Version: 3.0 Jan 04

Dated: 26/04/2004

Date Received: 26/04/2004

Document Type: Investigator CV
Version: 1
Dated: 26/04/2004
Date Received: 26/04/2004

Document Type: Protocol
Version: 2
Dated: 22/05/2004
Date Received: 26/05/2004

Document Type: Covering Letter
Version: 2
Dated: 22/05/2004
Date Received: 26/05/2004

Document Type: Copy of Questionnaire
Version: 2
Dated: 22/05/2004
Date Received: 26/05/2004

Document Type: Letters of Invitation to Participants
Version: 2
Dated: 22/05/2004
Date Received: 26/05/2004

Document Type: GP/Consultant Information Sheets
Version: 1
Dated: 26/04/2004
Date Received: 26/04/2004

Document Type: Participant Information Sheet
Version: 2
Dated: 22/05/2004
Date Received: 26/05/2004

Document Type: Participant Consent Form
Version: 2
Dated: 22/05/2004
Date Received: 26/05/2004

Management approval

The study may not commence until final management approval has been confirmed by the organisation hosting the research.

All researchers and research collaborators who will be participating in the research must obtain management approval from the relevant host organisation before commencing any research procedures. Where a substantive contract is not held with the host organisation, it may be necessary for an honorary contract to be issued before approval for the research can be given.

Notification of other bodies

We shall notify the research sponsor, North Essex Mental Health Partnership NHS Trust that the study has a favourable ethical opinion.

Statement of compliance (from 1 May 2004)

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

REC reference number: 04/Q0303/13 Please quote this number on all correspondence

Yours sincerely,



Dr John Kelly
Chairman

Enclosures Standard approval conditions

**APPENDIX 6
R & D APPROVAL**



Essex County Council

North Essex Mental Health Partnership



NHS Trust

Our ref: ST

12 July 2004

Ms R Akande
Trainee Clinical Psychologist
Oyster Court CMHT
St Helen's Lane
Colchester
Essex
CO1 1TY

Trust Headquarters
Cuton Hall Lane • Springfield
Chelmsford • Essex • CM2 5PX
Telephone: 01245 318434
Facsimile: 01245 318401
sarah.thurlow@nemhpt.nhs.uk

Dear Racheal

Re: Research Application Number: BA 04 21

I am pleased to be able to advise you that your application to the Trust to carry out the above research study has been further considered in the light of the amended protocol and has been approved. The Trust now has to meet rigorous standards set by the Department of Health for research governance. Consequently, your research must be carried out subject to the following conditions: -

- Permission to proceed is granted by the Local Research Ethics Committee. I have received a copy of a letter to you dated the 26 May from the ethics committee and so this is in place.
- The research must be carried out in strict accordance with the protocol submitted and any changes to that protocol must be approved by the R&D Committee and the Local Research Ethics Committee before the research is undertaken or continues.
- A financial or any other agreement relating to your research that is binding upon the Trust must be notified to me and thereafter approved and signed by the Chief Executive of the Trust.
- You must report any adverse events relating to this research to me as soon as practicable and I can be contacted on 01245 318434. In my absence, incidents should be reported to the Medical Director, Dr Sheila Mann. In addition, you must complete one of the Trust's adverse incident forms and follow the requirements as set out in the Trust's adverse incident reporting policy. A copy of the adverse incident form must be submitted to me as soon as possible.
- In cases where the research will take place over a period of more than 12 months, you will be required to send to me a short progress report on your research dealing with recruitment, any adverse incidents and interim findings as appropriate. You will be notified when the report is due.
- Any research terminated prematurely must be notified to me immediately.
- The results of your completed study must be sent to me within 3 months of completion of the study so that the Research and Development Committee can consider it. In addition, please

cont.....



supply a summary on a single page of A4 paper of the conclusions of the study that would be suitable for dissemination.

As a result of the Research Governance Framework for Health and Social Care, the Trust now has an obligation to monitor all research being undertaken within the Trust. Consequently the Trust, through the R&D Committee, will undertake random checks on research. If you were selected to have your research monitored, you would be notified to ensure your availability.

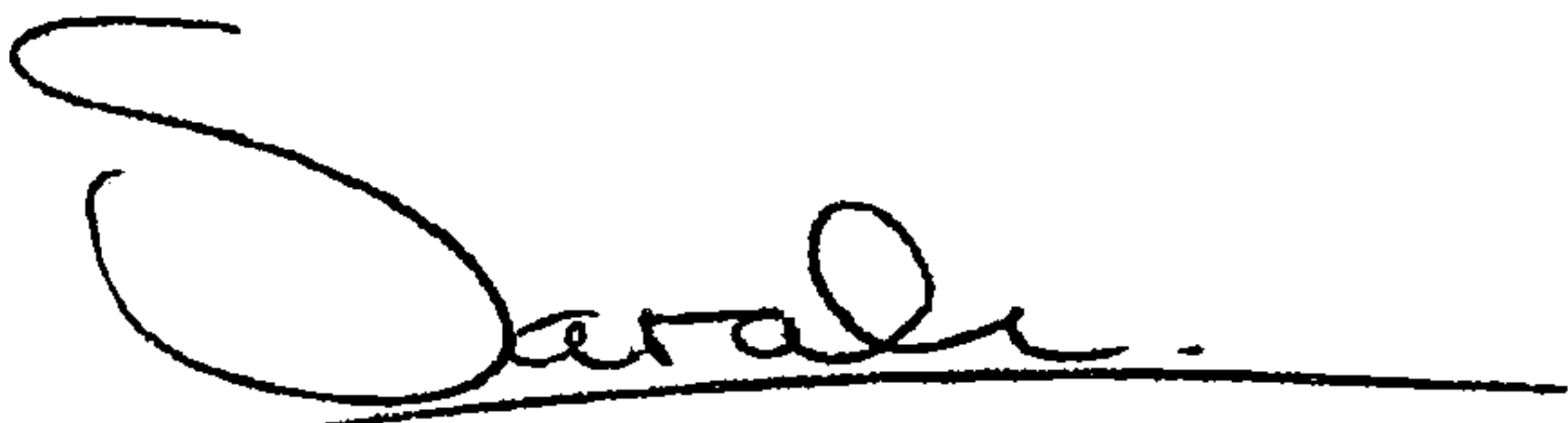
The R&D Committee, on behalf of the Trust, will revoke or suspend its approval to any research that does not comply with these conditions, is in breach of LREC approval or where there is any misconduct or fraud.

I must emphasise that the monitoring of research is simply a part of the general improvement of research governance standards within the NHS. The R&D Committee intend for these improvements to assist and support researchers and they are in no way intended to deter people from undertaking research. In an effort to explain why this monitoring is necessary, I enclose a brief guideline about research governance and if I can provide any further information, please do not hesitate to contact me. Alternatively you can access the Department of Health website at www.doh.uk/research.

I wish you the very best of luck with your research as do the rest of the Committee and we look forward to receiving a copy of your final report in due course. If I can help any further, please do not hesitate to contact me.

Best wishes

Yours sincerely



Sarah Thurlow
Research and Development Manager

Enc: A Guide to Research Governance

APPENDIX 7
Screening questionnaire

(To be completed by Rachel Akande (chief investigator) with potential research participants.)

Project identification number _____

Name: _____

(circle) Male Female

Address: _____

Telephone numbers: H: _____ M: _____

Date of Birth: _____

Name of contact within CMHT : _____

GP: _____

Use of non-prescribed drugs (circle) yes no

Units of alcohol per week _____

(Other than depression) do you have any mental health problems (circle)
yes no

Details _____

Have you received any (other) mental health diagnoses (circle) yes no

Details _____

Have you ever sustained a head injury(circle) yes no

Details _____

Do you have memory lapses (circle) yes no

If yes, how often? _____

Details _____

Have you, or anyone who knows you well noticed any recent changes in your behaviour, thoughts or personality (circle) yes no

Details _____

Have you ever been assessed for dementia (circle) yes no

Outcome _____

Is English your first language (circle) yes no

Comments

APPENDIX 8

VERBATIM INSTRUCTIONS FOR STANDARD RECALL TASK

The instructions to participants are taken from McNally et al (1995, cited on page 621). These are:

“This is an autobiographical memory experiment, and the procedure is very straight forward and goes as follows. I’ll be showing you a series of 20 words. Each word is printed on a separate card. Each word is the name of a trait or personal characteristic. Most of us exhibit or display each of these traits at one time or another. When I show you each trait word, what I’d like you to do is to think of a time when you exhibited or displayed the trait in question. The memory you retrieve should be very specific. That is, it should refer to a particular occurrence when you displayed the trait. So, for example, if the trait word were *excitable*, you might say “I was really excited last Sunday when I was watching the football game on TV”. That would be a specific personal memory because it referred to a particular event on a particular day when you displayed the trait. If you had said, “I always get excited when I watch football on TV” you would not have stated a *specific* personal memory because the memory did not refer to any *specific* event but rather to “watching football games in general”. So, for each word, we want you to think of a specific personal memory – a time when you displayed the trait in question. Although we want you to answer as quickly as you can, the most important thing is to answer with a specific memory, not a general memory. As soon as you think of a specific instance, I want you to describe it out loud, briefly. I’ll be timing how quickly you can recall a specific memory with this stopwatch. I’ll be giving you up to 60 seconds for each word. I’ll also record your responses on this tape recorder. Before we begin with the experimental words, I’ll give you four words for practice. Any questions?”

APPENDIX 9
VERBATIM INSTRUCTIONS FOR FREE RECALL TASK

"In the following task you will be asked to describe what is going through your mind while you remember an event, which happened in your life. I am going to give you a cue word and I would like to ask you to remember an event in response to this word. Try to remember this event as detailed and vividly as possible. In the process please report on all images, dialogues, thoughts, sensations and feelings that come to your mind. You will have two minutes time for each cue word. Please try to report on your thoughts continuously until the time is over. I would now like to ask you to describe everything that comes to your mind, while remembering a situation, in which you were [cue: sad/glad/lonely/safe]."

APPENDIX 10

PARTICIPANT 1 : DEPRESSED GROUP

PARTICIPANT 1: SAD when I was um there are so many I've been sad many times but to find something I mean it has to be something very specific I guess I go back to when my father died in um 7 years ago in August- August the 16th 7 years ago which would be 77 or is it 8 years ago can't remember um and I felt very sad when I was um very very depressed but I can't think of anything specific so I'm going back to when my father died and obviously you know um it was a very sad time he was a kind gentle person who although I didn't always agree with what he said um always respected him it was you know it's hard to explain really um

PARTICIPANT 1: GLAD I was really glad um yesterday evening when I spoke to my neighbour and he said we'd like to come and start cutting your wheat tomorrow because we've had such a bad harvesting year, the weather been appalling um I was really glad when he phoned up and said <name> if the weather's good tomorrow we'll come and cut your wheat because it's been a terrific worry um waiting for waiting for them to come and start harvest um mmm glad when they came and started I was away this morning got back here at um um about half past 12 and I could see the combines on the end of the field, ready to start so I was very very pleased to see them and I shall be glad when it's all over as well [laughs] the harvest I mean um um I shouldn't keep staring on the word

PARTICIPANT 1: LONELY specifically when I was very very depressed I can't remember the dates but er I felt very lonely then um although I knew there were people who were willing to help and er um probably could help me it didn't take away the feeling of of loneliness um um I don't get I don't get lonely when I'm working by myself and when I'm feeling feeling well and good I don't er I don't feel lonely um normally [what else do you remember] I remember being lonely at school when I went away to school I felt very lonely at the age of 10

PARTICIPANT 1: SAFE safe that's another very general word I think um I can't recall a specific feeling of oh I feel safe but I'm sure I do everyday when I come in and finish work for the day and I'm in my house and you know I'm going to bed or I'm sitting down eating a meal can't er can't bring any specific minute or time when I've said to myself oh I feel safe um perhaps the what I've just described is not when I'm feeling safe perhaps it's content I don't know um mmm well I felt the safe this morning when I opened it to get the cheque book out [laughs] ok just to throw a spanner in the works um

PARTICIPANT 3: CONTROL GROUP

PARTICIPANT 3: SAD When I was sad um when my mum's younger brother died when I was about um God how old was I I was like I think I was 12 and um basically um it was round about Easter time and he'd been sort of ill on and off for years and so when he eventually died I just 'cos it was the first sort of first time someone had died that I had sort of remembered properly because I had grandparents go when I was too young to really realise anything about it I just remember sort of you know when you're young you don't even know what depression is and stuff you just sort of feel a bit oo-er like that and I was sort of pretty much sort of like empty and useless for like weeks and weeks and I remember sort of how doing sort of stupid menial tasks just to take my mind off it it's a weird thing you do when you're a kid isn't it because you're usually out playing or just bugging about I specifically remember um I took the roof rack off

my dad's car because it had gone all rusty and I remember sort of taking it apart and sort of sanding it down with a wire brush and sort of painting it with Hammerite and it's just one of those sort of stupid tasks that it's just to keep my mind occupied and er yeah I've just it's a and then my my mum's older brother that's his brother as well he I remember him sort of like er just sort of hanging around checking I was ok 'cos you know he was pretty gutted too but but yeah that's the earliest thing I can remember being sad 'cos like I say it was the first time I remember 'cos my my mum's mum died when I was like 3 or 4 so I didn't really remember it at all so like she was there in memories and then sort of not anymore but this one this was the first proper like you know someone's died so well it's a weird thing it being Easter because um the er one of the guys in my um 'cos he died over the holidays so when we went back in school a couple of the guys

PARTICIPANT 3: SAFE Safe a specific time um specific er well it sort of semi-specific because um I used to have nightmares when I was a kid and um I used to sort of um it's weird because um I'm not that sort of close to my father really but he was the one I used to go to when I had nightmares and it's a weird thing sort of being in the bed with my parents and just the smell of my dad it's a weird thing sort of er so that just makes me feel really safe and um so e- even though now we're not really close or even when when I was younger sort of just that smell when I go home and visiting my parents it's sort of er you know I'm home safe nobody can touch me so it's sort of weird thing and um alright you know this is getting more specific it was um my brother he smells the same as my dad so when I was when I was over their flat two weeks ago and he was sort of smelling like that I'm getting I'm getting that same sort of home feeling of like you know nothing can touch me it's just a bizarre thing you know of just the smell of someone's sweat just to keep you sort of you know I'm safe so er yeah and I suppose yes this is another thing I mean I always feel safe with my brother anyway not not specifically because he'll look after me but you just know sort of I can see him like thing and sort of I don't know it's a bit like a bit monkey-ish isn't it sort of thing you know like the family unit yeah so the smell of my dad and my brother tend to make me feel safe ... um the only thing was nightmares were confusing 'cos they were never specific things with like monsters or anything it was sort of er like not being able to sleep properly and you know when you're a kid you don't understand what's going through your brain and everything I don't know maybe I was eating cheese before bed or something

PARTICIPANT 3: LONELY Lonely um um this was when I was at <place> er I'd only been there fore about I think it was two months it was the first weekend that I hadn't been visited by my brother or I hadn't gone home to <place> and er I just remember sort of being sort of completely on my own all day 'cos the people um the people on my course they'd sort of like been in <place> for a few years so they were out doing their own thing my housemates were all away that weekend um so I remember sort of getting up in the morning to an empty house and sort of like doing all the menial stuff like the washing and then I then I went for a swim could you know didn't know anyone at the pool came back and did the sort of you know hung it all out and sort of um I wandering round town on my own and it I I just remember thinking that sort of usually I can sort of go for ages and ages being on my own but 'cos there was just zero contact at all you know sort of completely and er sort of after sort of you wan- so wander round town get back home again and er it was it was sort of a case of so now what am I going to do and then I sort of just I sort of remember wandering round like and then I went to the gym and I got home thinking what to do now and I went off to the cinema got home again and it was just sort of one of those really really long days and I was 'cos obviously never

having been on my own before I just would couldn't understand how people coped being completely on their own cos I I always thought I was quite good at it being so you know but it's minimal contact don't know what it was obviously I got used to it pretty quickly yeah but er so that's what I think that's what sort of got me into my routine because I had my weekend routine because of that and sort of 'cos you're used to sort of ding the routine you don't have to sort of make yourself up to make stuff up to amuse yourself so it was er you know it worked out ok you know I think the very first one being away from home it's just very you know

PARTICIPANT 3: GLAD Glad oh yeah God this one um when er I applied to do physics at <place> my first degree er they I was re-sitting maths at the time they wanted me to get a B and previously I'd got a D in it so um in te re-sit it turned out I got an A but I remember sort of I remember the day quite clearly 'cos it was um it was good it was a good sunny day and I rode my brother's um racer into the college sort of chained it up anyway I got the result um the the headmaster he was sort of being quite smug behind the desk he sort of like looked through all the things and he goes um I think you'll be pleased an like gives you the thing like that you know yeah not bad and I just remember um on the way home I was er it was there was a song going through my head um was that's it my girl do you remember the film my girl with that song and that was going through my head all the way home 'cos I was just sort of really up and there was er like for hours I was just on this sort of really good high and I sort of like I thought brilliant I'm in now so yeah I was er well happy or well glad um I've changed my mind but it's it's such a turn around though 'cos obviously getting a D first time round in maths I just thought I was crap at it so then sort of when I did the re-sit year and everything you know it's dec- deceptively easy and then sort of actually getting an A I just sort of you know yeah it was er it was a good one ... er I remember there were a lot of girls crying that day obviously being er results day and er [laughs] and er it's strange but I've had like no empathy with them at all I was thinking like I've passed like I don't care you know all these girls like you know 'cos they didn't get like their A's to get into drama college they were all sort of crying and hugging each other and um but that was the ting I was on such a high I just didn't really care

CRITICAL REVIEW

TITLE

Autobiographical memory and depression: an investigation of over general memory processing on recall tasks.

HYPOTHESES

The study tested whether, by comparison to non-depressed individuals, people with depression produced more over general memories in response to a standard cued recall task. The retrieval process was explored using a free recall task. The predictions made were as follows:

1. People with depression will produce more general memories than non-depressed controls on a standard cued recall task.
2. The depressed group will produce more categoric and extended memories than non-depressed controls on a standard cued recall task.
3. People with depression will produce more general memories than non-depressed controls on a free recall cued task.
4. People with depression will produce more category-category and extended-extended pairs than non-depressed controls on a free recall cued task.

DESIGN

A cross-sectional observation study comparing performance on two memory tasks between clinically depressed and a comparison groups. The sample comprised 15 depressed and 15 non-depressed participants.

SETTING

Community Adult Mental Health Teams within one NHS Trust participated in identifying potential participants.

PARTICIPANTS

Participants were adults (aged between 18 years and 70 years). The depressed group were service users within the Trust who had a primary diagnosis of

depression. A comparison group were recruited through convenience sampling of Trust staff.

MEASURES

The Beck Depression Inventory (Beck, 1967) was used to assess each participant for symptoms of depression. A screening interview was developed specifically for use in the study. Along with demographic data, this was used to establish that respondents met inclusion criteria.

Two experimental measures were used: a standard cued recall task, and a free recall cued task. The standard recall task presented 20 trait words. Participants were asked to produce a specific memory in response to each trait, or cue word. On the free recall task, respondents were asked to think aloud (reporting everything that went through their minds) for 2 minutes in response to each cue word. 4 words were used in this task.

Memories recalled by participants on the two tasks were rated according to their specificity. That is, whether they contained contextual details (time, place and/or person). Memories with contextual details were rated as specific. Those without context were rated as general. Quantitative analysis investigated differences between the groups in the frequency of specific and general responses. Additional qualitative analysis of responses to the free recall task explored the retrieval process.

MAIN FINDINGS

As predicted, the depressed group produced fewer specific memories in response to the standard cued task. The difference between the groups remained significant after the lower productivity of the depressed group was taken into consideration. That is, despite the depressed groups producing fewer memories in total, it was demonstrated that the memories they did produce were more likely to be over general.

The study was based on cognitive stage models of memory such as Atkinson and Shiffrin (1971); Baddeley (1986). The literature reviewed suggested that autobiographical memories were stored within a hierarchical structure (Conway, 1996). Over generality was predicted to be as a result of an aberration in movement down the memory hierarchy (Williams, 1996). The use of the free

recall task provided opportunity to observe the retrieval process. In addition, it is more ecologically valid than standard recall tasks. The transcripts were analysed and there were differences between the groups. The comparison group were more able to move flexibly around the autobiographical memory network. Of particular importance, they moved down the memory hierarchy, through general memories, to specific, contextual details about events. However, the depressed group were observed to be less flexible in their memory searches. Further, they were more likely to move horizontally across the memory hierarchy, producing successive general memories. The findings suggest that people with depression experience an aberration in the autobiographical memory retrieval process.

Further research is required before a theory is developed to explain the causal relationship between memory retrieval, specificity and depression. However both quantitative and qualitative methods adopted appeared to tap into the same cognitive anomaly. The combination of these complementary methods was useful in exploring the cognitive experiences of people with depression. The study's findings have implications for clinical practice.

IMPLICATIONS FOR CLINICAL PRACTICE

Difficulties in cognitive processing and a bias towards over general recall have implications for diagnosis, treatment and relapse. These are addressed in turn.

Diagnosis

Mental health services rely on psychiatric diagnostic systems, such as the American Psychiatric Association's DSM-IV (1994) and the World Health Organisation's ICD-10 (1992). These rigid diagnostic measures place emphasis on descriptions of the individual. In addition, they minimize the individual's experiences to a set of largely arbitrary categories (Kirk, Kutchins and Rowe, 2003). Diagnostic labels are useful for communication between practitioners. For example, signposting a referral to nursing or to psychology dependent on the type of problems the service user is experiencing. However, the criteria for a diagnosis of depression focus on its affective nature. This creates a bias towards treatment with medication (Beck, 1967).

In addition, diagnostic tools do not emphasise the nature of cognitive distortions that may be experienced. As a result, over general thinking may go unnoticed

during the process of diagnosis. This severely compromises the validity of the clinical assessment. Over generality may result in the accentuation of the effects on functional abilities. This is commonly known as “catastrophising” within cognitive behavioural texts (such as, Hawton, Salkovskis and Clark, 1989; Greenberger and Padesky, 1995). As a result of this catastrophising, the individual may believe that his/her life is “all bad” or “all good”. This, overly negative view of one’s experiences, may increase the probability of receiving a diagnosis as the individual is likely to report more of the diagnostic criteria.

In order to improve the validity of diagnostic systems, clinical assessments must compensate for the bias towards over exaggeration of current difficulties. This can be done by prompting the individual to recall specific examples of experiences that support his/her beliefs. Since depression is associated with slowed cognitive processing, clinicians may also need to increase the length of the clinical interview to allow time for the client to identify specific memories. Similarly, in psychological assessments, care must be taken to ensure that specific examples of the client’s difficulties are obtained, rather than accepting global statements.

The process of being assessed may also influence the client’s mood and cognitive style. Teasdale’s differential activation hypothesis (1988, in Segal, Williams and Teasdale, 2002) suggests that mood and negative thinking are associated. The model suggests that low mood brings about negative thinking. The reverse is also implicated: an event that is interpreted negatively results in a reduction in mood. This introduces two further issues relevant to diagnostic systems. These relate to the reliability of measures and the effect of the assessment on the client. Diurnal variations in mood may reduce the reliability of diagnostic tools. How the individual is feeling on the day of the clinical interview may effect whether they catastrophise. As a result, there is an element of chance that the interview will take place on a day when the individual is low in mood.

In addition, the importance of therapist qualities is well recognised. For example, Rogers (1970) asserted that therapist should be empathic, warm and genuine towards their clients. This is not only important for therapeutic interventions, rather, the differential activation hypothesis suggests that the individual’s experience of the clinical assessment may influence its outcome. Low mood may be brought about if the clinical interview is perceived as a negative experience.

Diagnostic measures permit the collection of objective measures (such as weight loss, or corroboration from others). This may reduce the impact of any diurnal fluctuation in negative thinking. However, care must be taken to ensure that the interview process does not unduly influence the individual. Factors are not restricted to interpersonal, therapist qualities. There may also be accommodation issues. For example, the location of the interview may contribute to the experience. Variables could include whether the clinic is over crowded or whether the appointment is on a psychiatric ward or in a community clinic.

Psychotherapeutic Treatments

Brittlebank, Scott, Williams and Ferrier (1993) demonstrated that people who recalled over general memories had a poorer prognosis. Psychological formulations are holistic and can take into account physical and psychological difficulties. As a result the current study is useful in providing an account of the cognitive distortions that may be experienced in clinical depression. This understanding can help identify the symptoms that cause the most significant distress and ensure an appropriate treatment plan is developed. As suggested above, depressed individuals may need help focussing on specific events, rather than over generalising. This may impact upon the time spent assessing the individual before a formulation can be developed.

Goddard, Dritschel and Burton (1996) found over general recall was associated with difficulties in solving social problems. Specific memories provide exemplars for solving novel problems (Ross, 1984; Kolodner and Simpson, 1986). This means that a bias towards over general recall can reduce successful problem solving. The result of this difficulty, if over generalised, may affect the individual's self concept. Depression is characterised by feelings of sadness, inadequacy and hopelessness (Andersen and Limpert, 2001; Lavender and Watkins, 2004). This may be because of an over exaggeration of failure (Ehlers and Clark, 2000). For example, responding to difficulty in completing a task by thinking "I always fail". The individual may become distressed when talk about situations because of his/her perceived perpetual failure to succeed. Challenging negative thinking is a recognised part of cognitive behavioural interventions that are prevalent in the treatment of depression (for example, Fennell, 1989). It is possible that the client may perceive the therapist's request for specific memories during the assessment stage as challenging. However, since the effect of global generalisations may

affect the client's ability to form relationships, it is suggested that extra attention should be paid to building the therapeutic relationship prior to challenging his/her cognitive distortions. For example, over generalisation may result in a fixed view of the self. It may be difficult, therefore, for the individual to participate in therapy if s/he views her/himself as someone who does not talk about feelings.

The current study found that people with depression were more likely to experience an aberration at the general level of the hierarchy, that is, they ruminated. Rumination has been associated with dependency that is often characteristic of depression (Spasojevic and Alloy, 2001, in Lavender and Watkins, 2004). The effect of over general thinking on problem solving may be compounded by its effect on the self concept. For example, trouble resolving difficulties could result in feelings of failure. As a result, the individual may feel the need to be rescued from the problems of everyday life. In addition, the individual may have difficulty forming social relationships because of a negative self image. The positive regard shown to this individual by the therapist may intensify the need to remain in the therapeutic process because the individual feels socially isolated. The individual may, therefore, become overly dependent on the therapeutic relationship.

Principles from Cognitive Analytic Therapy (CAT) are useful in exploring these processes further. In addition, Ryle (1978) developed an integrative model of therapy. In doing so, he examined how dynamic concepts could be expressed in cognitive terms. For example, defence mechanisms were seen as false dichotomies that could be identified using repertory grids. As a result of these restricted constructions of events, inflexible plans of action would be available to the individual. Focus on the therapeutic relationship can help reduce over dependence on others. CAT centres on the way clients' relate to others. The notion of "reciprocal roles" (Ryle, 1978) draws upon Object Relations theory, suggesting that the individual develops styles of relating to others. These relationships provide the individual with a sense of self. In the example above, the individual may learn to be "dependent" when others are "caring". A key aim of the CAT therapist is to avoid being drawn into the client's reciprocal roles. At the same time, the therapist draws attention to the roles as they occur in the therapeutic process. It is suggested that these are essential components for the treatment of depression that minimise the impact of over general thinking.

Research has investigated how over general recall can be reduced, for example, mindfulness-based cognitive therapy (Williams, Teasdale, Segal and Soulsby, 2000, in Watkins and Teasdale, 2001). In addition, Watkins, Teasdale and Williams (2000, *ibid.*) found that distraction reduced over general memory recall, but rumination did not. The current study suggests that rumination may lead to an increase in over general recall. Watkins and Teasdale (2001) suggest that it is the self-evaluative thinking component of rumination that increases over general recall; whereas the self-focus component of rumination was associated with low mood. This creates a difficulty for the therapist as analytic therapy, which primes the client towards self-evaluation, may increase over general thinking. Further, therapy that involves the client focusing on their past experiences may increase the severity of low mood. The interaction of these variables in treatment may lead to variation in mood and in the extent of over generality during the course of therapy. Strategies that reduce the level of self focus, such as distraction techniques may be successful in the treatment of depression (Fennell and Teasdale, 1984; Fennell, Teasdale, Jones and Damle, 1987; in Lavender and Watkins, 2004).

Relapse

The individual's perception of a recovery may be changeable dependent on his/her mood. Further, negative mood has a greater impact upon previously depressed individual's thinking, than never-depressed thinking (Segal and Ingram, 1994, in Clark and Beck, 1999). Since thinking and mood are associated (Teasdale, 1988, in Segal, Williams and Teasdale, 2002) there is an increased probability of a relapse following a negative event. Gains made in therapy may be short lived if due consideration is not given to relapse prevention. It may be insufficient to observe improvements in current functioning. Rather, the individual should be helped to make provisions for solving problems that may arise in the future. This may lengthen the therapy process, which holds implications in light of constraints already placed on under resourced psychological services. It may be particularly difficult for clinicians to argue the importance of continuing to offer therapy to a client who does not currently present with functional difficulties.

Other findings and implications for clinical practice

There is potential for clinical practice, psychotherapy research and academic research to broaden an understanding of cognitive distortions in depression. For

example, clinical data may produce accounts of experiences given during various stages the therapeutic process. These accounts can be compared to see how they change through the course of therapy. Herlihy, Scragg and Turner (2002) observed that accounts of traumatic experiences from individuals granted asylum changed with time. The researchers deliberately recruited participants whose testimony was not going to influence their refugee status. That is, they were unlikely to need to over state their traumatic experiences because they were seeking asylum, since that had previously been granted. In addition, they found that there were more discrepancies for peripheral than central details of the events. Unable to provide a causal explanation for discrepancies, the authors speculate that may be recalling thematic memories. The current study supports theories that suggest that memories with a similar theme are amalgamated. As with depressed individuals, Herlihy et al's sample may have been failing to distinguish between memories stored within the same category. Similar studies to Herlihy et al's could be carried out on levels of over generality or ruminating during the course of treatments for depression.

Alternatively literature on cognitive interviewing techniques and false memories may improve the efficacy of psychotherapeutic interventions. Geiselman and Fisher (1985, in Halpern, 1989) were attempting to improve the reliability of witnesses testimony. They identified a series of strategies that enhanced recall for crimes. Firstly, the individual is directed to visualise the circumstances surrounding the target event, such as the weather, or his/her mood on the day in question. Then s/he is instructed to report everything that comes to mind and to think what happened before and after the event. Finally the individual is asked to change perspective, and imagine seeing the event through the eyes of another person present when the event happened. These strategies were found to improve the information recalled by witnesses and may also improve autobiographical retrieval in people with depression. The current study found that people with depression were less adaptive in their movement around the memory network. That is, they were less likely to move vertically up and down the hierarchy. As a result, cognitive interviewing may be more difficult for them to master. Further research could investigate necessary modifications to the teaching of the techniques to enhance its use with people with depression.

Improvements in technology (such as MRI scans) and active engagement in

research on autobiographical processes, have resulted in progressively more complex theoretical explanations. These explanations need to incorporate findings from early research. For example, information that is forgotten over time (Ebbinghaus, 1885, in Baddeley, 1997); or the role of state-dependent recall (Bower, 1981, *ibid*). Reflections on the research process may be of interest and useful to anyone considering studying this area further.

REFLECTIONS ON THE RESEARCH PROCESS

The study arose because of an interest in memory processes. The literature review focused on over general memory in post traumatic stress disorder (PTSD). Originally, it was hoped that people with PTSD would be recruited to participate in the study. However, difficulties were encountered in finding a service that would consider access to their service users.

Lists of potential supervisors and traumatic stress websites were reviewed. This identified 33 clinicians within the region who worked with people with PTSD, the majority of whom were based in London. Of 33 email messages sent to those clinicians, 21 did not respond. The remaining 12 asked for more information about the prospective study. Of those 10, most stated that their service was participating in studies carried out by trainees on London-based courses. Two agreed to meet to discuss the study further. One of these practitioners worked in a child service, but provided an introduction to a colleague in the adult service. However, the adult service was already participating in recruitment for London-based trainees, and as such was unable to consider this project further.

The remaining practitioner was prepared to support the recruitment of participants. However, the large refugee population served by the service were predicted to be problematic. Firstly, the delays encountered in finding the service to recruit from intensified the time pressures of completing a doctoral thesis whilst managing a clinical case load. Travelling time of approximately 2 hours between the location of the clinical placement and research site was also prohibitive. In addition, many of the service users were not native English speakers. This introduced two further problems: the verbal protocols of individuals who speak English as a second language may be different. In addition, the data may have been distorted by the involvement of translators. For example, it would be difficult to control the level of prompting from the translator or to ensure that the exact words uttered by the

participant were translated into English.

Recruitment

As a result of the above difficulties, and since there were many recently published research articles on memory specificity in depression, the decision was made to change the focus of the study.

Initial discussions with local practitioners working within a community team were positive. It was envisaged that there would be no difficulty recruiting sufficient numbers from the service. However, this optimism declined once ethics approval had been received and practitioners were contacted again. It became difficult to arrange meetings with clinicians who were struggling to manage their heavy workloads. When meetings were arranged, there was a general sense that they were unable to spend time identifying which of their clients might meet criteria for participation. In addition, they expressed concern that their clients may be too vulnerable to be asked probing questions about their histories.

As a result, recruitment was broadened to include 6 more community mental health teams within the Trust. These teams were all sent copies of the proposal and information sheets. In total, 70 telephone calls to service managers and clinicians were made to progress the recruitment process. Clinicians were asked to give participant information sheets to any service users that might be appropriate for inclusion in the study. Ultimately, 15 people with clinical depression consented to participation. A further two consent forms were returned after data collection had been completed. It may be that clinicians photocopied participant information sheets to give to their clients. As a result, it is difficult to calculate the response rate. However, 47 forms were given to clinicians, 17 consent forms were returned to the researcher and one individual emailed the researcher to consent to participate. The response rate, therefore, was approximately 38%.

As a result of the delays in recruiting the clinical sample, it was imperative to collect data from the comparison group as quickly as possible. Therefore, the quickest sampling method was used: convenience sampling of nursing, secretarial and psychology colleagues. It is acknowledged that this may reduce the potential for generalising the findings of the study. That is, sampling biases may have been

introduced by recruiting participants known to the researcher into the control group.

Study design

When developing the research protocol, it had been envisaged that the study would use qualitative methods, such as grounded theory. Most published research on memory specificity has adopted quantitative methods. As a result, many inferences would have had to be made in designing a qualitative study on the basis of a quantitative literature review. Initially, this was disappointing. However, the resultant study demonstrated that the combination of both methods enhanced the interpretation of the data. The standard recall task produced quantitative data that demonstrated that the sample were representative of the depressed population studied elsewhere. Then, the retrieval process was explored using (qualitative) observational analysis. Indeed, it is recommended that future studies continues to use such methodological eclecticism in clinical research.

Conclusion

In summary, this study demonstrated that people with depression experience an aberration in the memory retrieval process. Despite recommendations for improvements to the methodology, the study was useful in exploring cognitive processing. It was suggested that the observed deficit in processing results in a bias towards over general memory recall, which may influence self-concept and ability to problem solve. The consequent functional difficulties should be borne in mind by clinicians treating service users with depression.

Word count 4271

References

American Psychiatric Association. (1994). Diagnostic and Statistical Manual of Mental Disorders, 4th edition: DSM-IVTM. Washington: American Psychiatric Association.

Andersen, S.M. & Limpert, C. (2001). Future-event schemas: Automaticity and rumination in major depression. Cognitive Therapy and Research, 25, 3, 311 – 333.

- Atkinson, R.C., and Shiffrin, R.M. (1971). The control of short-term memory. Scientific American, 225
- Baddeley, A.D. (1986). Working memory. Oxford University Press.
- Baddeley, A. (1997). Human Memory: Theory and practice, revised edition. Hove: Psychology Press.
- Beck A.T. (1967). Depression: causes and treatment. Philadelphia: University of Pennsylvania Press.
- Brittlebank, A.D., Scott, J., Williams, J.M.G., & Ferrier, I.N. (1993). Autobiographical memory in depression: State or trait marker? British Journal of Psychiatry, 162, pp 118 – 121.
- Clark, D.A. & Beck, A.T. (1999). Scientific Foundations of Cognitive Theory and Therapy of Depression. Chichester: John Wiley and Sons, Inc.
- Conway, M.A. (1996). Autobiographical knowledge and autobiographical memories. In D.C. Rubin (Ed.), Remembering our past: studies in autobiographical memory. (pp.67 – 93). Cambridge: Cambridge University Press.
- Ehlers, A. & Clark, D.M. (2000). A cognitive model of posttraumatic stress disorder. Behaviour Research and Therapy, 38, pp 319 – 345.
- Fennell, M. (1989). Depression. In K. Hawton, P.M. Salkovskis, J. Kirk & D.M. Clark (Eds.), Cognitive Behaviour Therapy for Psychiatric Problems: a practical guide. (pp. 169 – 234). Oxford: Oxford University Press
- Goddard, L., Dritschel, B., & Burton, A. (1996). Role of autobiographical memory in social problem solving and depression. Journal of Abnormal Psychology, 105, pp 609 – 616.
- Greenberger, D. & Padesky, C.A. (1995). Mind over mood: change how you feel by changing the way that you think. New York: Guildford press.

Halpern, D.F. (1989). *Thought and knowledge: an introduction to critical thinking*, 2nd edition. London: Lawrence Erlbaum Associates.

Hawton, K., Salkovskis, P.M., Kirk, J. & Clark, D.M. (1989). Cognitive Behaviour Therapy for Psychiatric Problems: a practical guide. (pp. 169 – 234). Oxford: Oxford University Press

Herlihy, J., Scragg, P., & Turner, S. (2002). Discrepancies in autobiographical memories – implications for the assessment of asylum seekers: repeated interviews study. British Medical Journal, 324, pp 324 – 327.

Kirk, S., Kutchins, H. & Rowe, D. (2003). *Making us crazy: DSM – the psychiatric bible and creation of mental disorders*. London: Constable & Robinson Ltd.

Kolodner, J.L., & Simpson, R.L. (1986). Problem Solving and Dynamic Memory. In Kolodner, J.L., & Reisbeck, C.K. (Eds.), Experience, Memory, And Reasoning. (pp 99 – 114). London: Lawrence Erlbaum Associates.

Lavender, A., & Watkins, E. (2004). Rumination and future thinking in depression. British Journal of Clinical Psychology, 43, pp 129 – 142.

Rogers, C.R. (1970) On becoming a person: a therapist's view of psychotherapy. Boston: Houghton Mifflin.

Ross. B.H. (1984). Reminders and their effects in learning a cognitive skill. Cognitive Psychology, 16, pp 371 – 416.

Ryle, A. (1978). A common language for the psychotherapies? British Journal of Psychiatry, 132, pp 582 – 94.

Watkins, E., & Teasdale, J.D. (2001). Rumination and overgeneral memory in depression: effects of self-focus and analytic thinking. Journal of Abnormal Psychology, 110, 2, pp 353 – 357.

World Health Organization. (1992). The ICD-10 Classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines. Geneva: WHO.

Williams, J.M.G. (1996). Depression and the specificity of autobiographical memory. In D.C. Rubin (Ed.), Remembering our past: studies in autobiographical memory. (pp 244 – 267). Cambridge: Cambridge University Press.