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OXFORD REGIONAL TRAINING COURSE IN CLINICAL PSYCHOLOGY

**A Comparison of Self- and Other- Attributions
in Paranoid, Depressed and Non-patient Individuals**

by

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ABSTRACT

A “self-serving” attributional bias (attributing positive events to something about oneself, and negative events to external factors) commonly found in non-patients has been found to be *exaggerated* in patients with persecutory delusions. Moreover, research using a newly developed attribution measure, the Internal, Personal and Situational Attributions Questionnaire (IPSAQ; 1996), found that paranoid patients tended to exhibit a “personalizing bias” for negative events, choosing external attributions that located blame in others. Such attributional biases have been found in relation to self-referent events but it is unclear whether they are also found in relation to other-referent events.

The present study investigated whether participants made differential attributions, depending on whether hypothetical events were happening to themselves or to another person. The IPSAQ was modified to incorporate another dimension: self- versus other-referent events. The modification was piloted on 21 non-patients and some additional alterations made.

There is also debate about the relationship between self-esteem and depression in people with persecutory delusions. Consequently, this was also explored in the study.

In the main study, there were 62 participants (20 patients with persecutory delusions, 21 depressed patients, 21 non-patients). Findings indicated acceptable test-retest and internal reliability for the IPSAQ-M. For self-referent events, paranoid participants made more external-personal attributions for negative events than depressed participants (but not non-patients). Depressed participants exhibited an abnormal attributional style. Paranoid participants did not exhibit an exaggerated self-serving bias or a personalizing bias. For other-referent events, depressed patients made causal attributions similar to non-patients. A difference in attributions, between self- and other-referent events, was less clear for paranoid participants.

In addition, significant negative correlations were found between self-esteem and depression for all three groups, supporting a “normal emotional processes” account of persecutory delusions.

Implications for psychological treatment and possible avenues for future research were discussed, as well as methodological and theoretical limitations of this study.

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SECTION 1

INTRODUCTION

Please note: The terms “persecutory delusions”, “paranoid”, and “paranoid beliefs” will be used interchangeably throughout this text.

1. INTRODUCTION

1.1 Area of Investigation

A substantial body of research has been conducted focusing on the psychological processes involved in the formation and maintenance of delusions, particularly over the past decade. The role of cognitive biases, in particular, has been highlighted by studies of patients’ “attributions”, or causal explanations, for positive and negative events. A “self-serving” attributional bias commonly found in non-patients has been found to be exaggerated in individuals with persecutory delusions: such that paranoid individuals “take credit” (i.e. make internal attributions) for positive events, whilst attributing negative events to external factors. Furthermore, research using a newly developed attribution measure, the Internal, Personal and Situational Attributions Questionnaire (IPSAQ) has found that, in relation to negative events, non-patients tend to choose external-situational attributions, whilst paranoid individuals tend to exhibit a personalizing bias, locating blame in other people (Kinderman & Bentall, 1997a). These authors suggest that paranoid delusions (and perhaps other types of delusions) have a functional significance, such that delusional attributions may serve to maintain a positive perception of the self.

However, it is unclear whether these attributional biases, which are found in relation to self-referent events, are also found in relation to other-referent

events. Attribution research in anxiety disorders, and more recently, eating disorders, has suggested that cognitive biases are mainly found in relation to self-referent events but not events relating to another person (Butler & Mathews, 1983; Cooper, 1997). This has clear implications for cognitive therapy in these disorders.

The present study aims: (1) to assess the reliability (test-retest and internal), acceptability and face validity of a modified IPSAQ, which incorporates another dimension: self- versus other-referent events; (2) to replicate the findings of Kinderman & Bentall (1997a) that paranoid individuals, compared with non-patients, tend to exhibit a personalizing bias for negative self-referent events (i.e. locating blame in others), and tend to exhibit an exaggerated self-serving bias for positive self-referent events (i.e. taking credit for themselves); and (3) to investigate whether the same attributional biases are found in paranoid patients, when situations refer to events happening to another person (other-referent).

In addition, recent research casts doubt on the hypothesis that persecutory delusions function as a defence against low self-esteem (Freeman, Garety, Fowler, Kuipers, Dunn, Bebbington & Hadley, 1998). It has been proposed that self-esteem is more closely related to other factors such as depression, so-called "normal emotional processes". As a result of this, the fourth aim of this study is to explore the relationship between self-esteem and depression in paranoid participants, compared with participants with depression and non-patients.

1.2 Overview of Introduction

To begin with, as research into psychotic symptoms has traditionally been conducted in the context of diagnostic classifications, persecutory delusions will be discussed in relation to schizophrenia research. Discussion will then move onto research and psychological treatments focusing on single symptoms of psychosis, rather than syndromes.

Following this, some of the research focusing on cognitive biases is reviewed: research regarding probabilistic reasoning biases in people who experience delusions will be reported. Then, more specifically, research into persecutory delusions will be reviewed, including: evidence that attentional biases and attributional biases are implicated in the formation and maintenance of paranoid beliefs; a proposed link between self-discrepancies and attributional processes in paranoid patients; a possible association between persecutory delusions and a Theory of Mind deficit; and current research and theoretical limitations. Finally, the aims of the present study, as well as hypotheses and questions, will be presented.

1.3 The Concept of Schizophrenia

Traditionally, psychiatric thinking in Great Britain was dominated by Kraepelin's diagnostic approach to schizophrenia (Clare, 1980). Kraepelin (1896) was the first to group the symptoms of schizophrenia under a single category which he called "dementia praecox": Bleuler (1911) later renamed the hypothesized disease entity "schizophrenia". This method of classification

implies that patients should be studied according to diagnostic grouping, despite the heterogeneity of their psychotic symptomatology. Consequently, for many years, research into psychotic symptoms, including persecutory delusions, was conducted within the broader context of research on schizophrenia and other diagnostic categories.

1.4 Diagnostic Definitions

Schizophrenia can be defined as a disturbance in which two (or more) of the following symptoms must be present: delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behaviour, and negative symptoms (such as flattened affect or social withdrawal). In order to meet DSM-IV criteria (APA, 1994), these symptoms must have been present for at least six months, including at least one month of active-phase symptoms: also, there must be evidence of social or occupational dysfunction for a significant proportion of the time since the onset of the disturbance.

Paranoid schizophrenia is the most common type of schizophrenia in most parts of the world. The clinical picture is dominated by relatively stable delusions, usually accompanied by hallucinations. The most common paranoid symptoms are: delusions of persecution, reference, exalted birth, special mission, bodily change or jealousy; and hallucinatory voices that threaten the individual or give commands, or other auditory hallucinations such as whistling, humming, or laughing.

According to DSM-IV, *delusions* are defined as “erroneous beliefs that usually involve a misinterpretation of perceptions or experiences”. Their content may include a variety of themes (e.g. persecutory, referential, somatic, religious or grandiose). Delusions can occur in several neurological and psychiatric disorders but, when their content is bizarre, they are particularly characteristic of schizophrenia.

Persecutory delusions involve the individual believing that he or she is being tormented, followed, tricked, spied on, conspired against, harassed, cheated, poisoned or drugged or subjected to ridicule. They are said to be the most common form of delusional belief (DSM-IV; APA, 1994).

1.5 Epidemiology of Schizophrenia

As persecutory delusions are most commonly present when a diagnosis of schizophrenia–paranoid type has been made, and no specific studies of epidemiology have been conducted for persecutory delusions (or other single psychotic symptoms), the epidemiology of schizophrenia will presented here, with the assumption that persecutory delusions are present within a subset of people diagnosed as having schizophrenia. However, it must be recognised that persecutory delusions are not always present in diagnoses of schizophrenia, and that persecutory delusions can be present in other psychotic disorders, including delusional disorder.

Schizophrenia is a common disorder with a lifetime risk of between 0.5 and 1 per cent. It is estimated that approximately two new cases per 10,000 head of

population will emerge annually. Men and women are both similarly at risk of developing schizophrenia, although men often have a slightly worse long term outcome. Median age of onset is 24 years in men, and 28 years in women; usually within the range: 16-40 years, although the illness can occur in children as young as eight years, and for the first time in older adults (Drake, Haddock, Hopkins & Lewis, 1998).

1.6 Symptoms versus Syndromes

Over the past 10-15 years, there has been a move away from research concentrating on traditional psychiatric diagnostic classification: particularly in research into the treatment of schizophrenia. Many authors now advocate the investigation of particular *symptoms* of psychosis, such as delusional beliefs or hallucinations, rather than *psychotic syndromes*, such as schizophrenia. Persons (1986), for example, argued that symptom-focused research may prove more informative in developing an understanding of the nature of the psychological processes underlying psychotic symptoms.

Others have expressed doubts about the scientific reliability and validity of conventional psychiatric classifications. Bentall, Jackson & Pilgrim (1988), for example, cited research evidence which found that: different clinicians characterize schizophrenia in different ways; the course and outcome of schizophrenia is highly variable; the diagnosis of schizophrenia is not a valid predictor of response to treatment, and is often difficult to differentiate from other conditions, such as affective disorder.

Further questions relate to the validity of schizophrenia as a distinct entity, discontinuous with “normal” experience (Jaspers, 1913/1963). From this viewpoint, symptoms such as delusions and hallucinations were regarded as abnormal, bizarre and irrational: and were believed to be impervious to counter-argument or the impact of experience and, therefore, not amenable to “talking” therapies. However, empirical and clinical evidence indicates that it may be more valid to view “normal” experience and psychosis as existing at two ends of a continuum, ranging from healthy functioning, through eccentricity, to florid psychoses (e.g. Fowler, Garety & Kuipers, 1995). Surveys, for example, have demonstrated that mild anomalies in experience, thinking and belief which have a resemblance to psychotic symptoms (e.g. experiences of déjà vu, beliefs in telepathy, hearing voices) occur in around 10-15% of the general population (Tien, 1991). Furthermore, hallucinations and other psychotic experiences can be induced in people with no current or past history of mental health problems, when put under unusual conditions (e.g. solitary confinement, hostage situations, sensory or sleep deprivation, etc.), when severe infections (e.g. pneumonia) are contracted, or when hallucinogenic drugs (e.g. LSD) are taken (Kingdon & Turkington, 1994).

Such research findings have led Bentall et al (1988), and other authors, to argue that research should focus on the study of individual symptoms of psychosis, rather than syndromes. This approach has proved fruitful for the development of psychological interventions:

1.7 Psychological Treatments for Psychotic Disorders

The first psychological treatments developed for people with psychosis focused on syndromes rather than specific symptoms. Until recently, much clinical psychology input into psychosis was limited to helping long-term sufferers cope with residual difficulties or to offering family interventions, without an individual therapy component. Behaviour modification approaches, such as token economy and social skills training were introduced in the 1960's. However, whilst such methods reported positive results, improvements were rarely long lasting and often failed to generalize to other settings or situations (Hall, Baker & Hutchinson, 1977).

Family interventions in schizophrenia, based on the concept of "expressed emotion", have been more promising. Using this approach, a number of studies have found reduced patient relapse rates, increased patient social functioning, and reduced subjective burden of relatives (e.g. Tarrier, Barrowclough, Vaughn, Bamrah, Porceddu, Watts & Freeman, 1988; Randolph, Eth, Glynn, Paz, Leong, Shaner, Strachan, VanVort, Escobar & Liberman, 1994). Despite these research findings, the integration of family interventions into routine services remains problematic (Kuipers, 1998).

In recent years, psychological research focusing on a range of specific symptoms of psychosis has resulted in the development of theories which offer frameworks for understanding individual psychotic symptoms. These have been used clinically to guide assessment and intervention. Consequently, a wide range of cognitive-behavioural interventions have been

developed which aim to help individuals to reduce the distress and disturbance associated with their psychotic symptoms. Such approaches include: coping skills enhancement (Tarrier, 1992); cognitive behaviour therapy (e.g. Kingdon & Turkington, 1994; Fowler et al, 1995); cognitive therapy (e.g. Chadwick, Birchwood & Trower, 1996); and attributional therapy (Kinderman & Bentall, 1997b). These approaches have used techniques such as: functional analysis, coping skills training, psychoeducation, behavioural experiments and belief modification.

Preliminary findings from a small number of studies have indicated that such interventions are promising (e.g. Tarrier, Beckett, Harwood, Baker, Yusupoff & Ugarteburu, 1993; Garety, Kuipers, Fowler, Dunn & Chamberlain, 1994; Haddock, Bentall & Slade, 1996). Of particular importance, a recent randomized controlled trial of CBT for psychosis demonstrated, after nine months of treatment, improvements in overall symptomatology in people with medication-resistant, long-standing, and distressing positive symptoms of psychosis (Kuipers, Garety, Fowler, Dunn, Bebbington, Freeman & Hadley, 1997). Furthermore, drop-out rates for therapy were low and satisfaction was high, suggesting that the clients welcomed this kind of intervention. This study also found continued improvements at a follow-up evaluation 18 months after the initial assessment (Kuipers, Fowler, Garety, Chisholm, Freeman, Dunn, Bebbington, & Hadley, 1997).

1.8 Research into Persecutory Delusions

In the following text, some of the research focusing on cognitive biases is reviewed: in particular, research relating to persecutory delusions:

1.8.1 Cognitive Biases

The importance of information processing errors in eliciting and maintaining emotional disturbance has been highlighted in cognitive theories of anxiety and depression. Beck, Emery & Greenberg (1985), for example, have observed that one error patients make is to interpret situations in terms of their concerns when there may be several possible alternative interpretations. This preferential processing of information of particular content has been termed a “cognitive bias”. In one study, both anxious and depressed patients were more likely than normal controls to interpret ambiguous stimuli as threatening, although this bias disappeared after recovery (Eysenck, Mogg, May, Richards & Mathews, 1991).

Research in anxiety and, more recently, eating disorders, has found that such biases appear to be specific to judgements involving the self (self-referent) and are not typical of judgements involving other people (other-referent). They are particularly likely to be apparent to judgements involving the self when events have a negative outcome: for example, in one study (Butler & Mathews, 1983), anxious participants tended to think that negative threatening events, in particular relatively severe threats to their health, were more likely to happen to them than to someone else. Cooper (1997) also found that, when events involving the self had a negative outcome, patients with eating disorders selected explanations which related to their weight and shape in preference to other explanations: however, this bias was not found in judgements involving others.

1.8.2 Cognitive Biases in Paranoid Patients

Paranoid patients have also been shown to exhibit a wide range of cognitive biases (Bentall, 1994): including those affecting memory (Bentall, Kaney & Bowen-Jones, 1995) and probabilistic reasoning (Dudley, John, Young & Over, 1997a & 1997b; Garety, Hemsley & Wessely, 1991; Huq, Garety & Hemsley, 1988; Bentall & Young, 1996), as well as cognitive biases affecting attentional processes (Bentall & Kaney, 1989; Kinderman, 1994) and attributional style (Candido & Romney, 1990; Fear, Sharp & Healy, 1996; Kaney & Bentall, 1989).

1.8.3 Probabilistic Reasoning Biases

With regard to probabilistic reasoning, for example, research findings indicate that people who experience delusions request less information before reaching a decision, than control participants (Huq et al, 1988). These findings were substantially replicated in a later study (Garety et al, 1991). Rather than this being due to an absolute deficit in reasoning, recent findings suggest that deluded individuals may have a tendency or bias to early acceptance and, to a lesser extent, early rejection of hypotheses (Garety & Freeman, 1999). It was proposed that this may, under certain conditions, contribute to erroneous inferences and, therefore, delusion formation.

Dudley et al (1997a), for example, found evidence of a specific *data-gathering* or *“jumping to conclusions”* bias: such that, in conditions where the evidence

was predetermined by the experimenter, and all the participants were required to decide at the same point, there was no difference between deluded and control participants in ability to reason. However, when participants were free to determine the amount of evidence they required before making a decision, people with delusions requested less information. Thus, deluded participants showed a tendency to seek less information to reach a decision but, when presented with information, they were able to use it. It was suggested that an early jump to conclusions style may reduce the investment that a person has to make in the decision; alternatively people with delusions may be less able to consider alternatives or are unwilling to entertain other hypotheses or tolerate ambiguity (Dudley et al, 1997a).

Garety & Freeman (1999) concluded that, because people with delusions can estimate probabilities, they do not have a probabilistic reasoning bias, as studies previously suggested (e.g. Garety et al, 1991), but rather they have a *data-gathering bias*.

1.8.4 Selective Information Processing Biases

Furthermore, there is evidence to suggest that, for people with persecutory delusions, there exists a specific *selective information processing bias* for information of relevance to the self. More specifically, findings from a number of studies suggest a pattern of information processing biases concerning material relating to personal threat in paranoid individuals (e.g. Bentall & Kaney, 1989; Kaney, Wolfenden, Dewey & Bentall, 1992; Fear et al, 1996).

Bentall et al (1995), for example, asked deluded, depressed and normal participants to recall items from a list of threat-related, depression-related and emotionally neutral words. The deluded participants showed a bias toward recall of both threat-related and depression-related words; whereas the depressed participants showed a recall bias only towards depression-related words. The deluded participants also showed a significant tendency to repeat threat-related words during recall, unlike control participants.

Furthermore, Kinderman (1994) found that people with persecutory delusions showed a marked degree of interference when colour-naming personally descriptive words of both positive and negative content, similar to that of people with depressed mood. This suggests that information relating to the self-concept is highly salient for both these groups. However, compared with depressed controls, people with persecutory delusions demonstrated a significantly higher rate of endorsement for positive adjectives than negative adjectives. The author suggests that whilst information relating to potential threats to self-esteem is salient to both people with persecutory delusions and people with depressed mood, deluded individuals seem to use defensive processes in a different way, perhaps in order to deal with core disturbances in the self-concept.

Recent research looking at the effect of self-referent material on the probabilistic reasoning of people with delusions (Dudley et al, 1997b) found that, when required to reason with material of an emotionally salient (or self-referent) nature, participants from all the groups reduced the amount of

evidence requested before making a decision: with deluded participants requesting much less information in the salient condition, compared with a neutral condition (although between-groups comparison did not reach significance). Thus, it was concluded that whilst jumping to conclusions is more likely across groups, for emotionally salient material, this “hastiness bias” may be further exaggerated in people with delusions.

1.8.5 Attribution Theory and Attributional Biases

Attribution theory concerns the way in which people make use of information to arrive at causal explanations for significant events which occur in their lives (Fiske & Taylor, 1991). Abnormalities in attributional style - the pervasive tendency to explain personally significant events in a particular manner - are believed to be of central importance in a range of psychological disorders, such as depression and anxiety (Buchanan & Seligman, 1995). Findings indicating the role of cognitive biases in paranoid delusions, have also come from studies of individual attributions for positive and negative events.

Kaney & Bentall (1989), for example, found that patients with persecutory delusions exhibited an *abnormal attributional style* as measured by the Attributional Style Questionnaire (ASQ; Peterson, Semmel, Von Baeyer, Abramson, Metalsky & Seligman, 1982). In comparison with non-patient and depressed controls, paranoid patients tended to make abnormally internal, global, and stable causal attributions for positive events and abnormally external, global, and stable causal attributions for negative events. In other words, if something went wrong, paranoid patients showed a systematic

tendency to blame other people, whereas if something went right, they showed an equally systematic and excessive tendency to credit themselves, compared with non-patients. In contrast, depressed patients tended to blame themselves if something went wrong; and attribute the cause to external factors if something went right. Evidence of a bias to excessively external attributions for negative events in people with persecutory delusions, compared to depressed and non-patient control groups, has been substantially replicated by Candido & Romney (1990), and Fear et al (1996). However, evidence in support of an internalising bias for positive events is much less strong: such that three studies did not find an exaggerated self-serving bias in paranoid patients (Lyon, Kaney & Bentall, 1994; Fear et al, 1996; Sharp, Fear & Healy, 1997).

However, using a different approach, comparable findings have been obtained. Kaney & Bentall (1992) asked participants to play computer games with predetermined outcomes (i.e. "rigged" to either win or lose). They found that paranoid patients show an exaggerated tendency to claim control when winning but not when losing, compared with non-patients. In contrast, depressed patients (accurately) believed that they had little control in either condition.

As suggested earlier, it has been argued that persecutory delusions have a functional significance; such that they are a product of attributional processes which serve to maintain a positive perception of the self: Bentall, Kinderman & Kaney (1994) suggest that by attributing negative events to external causes,

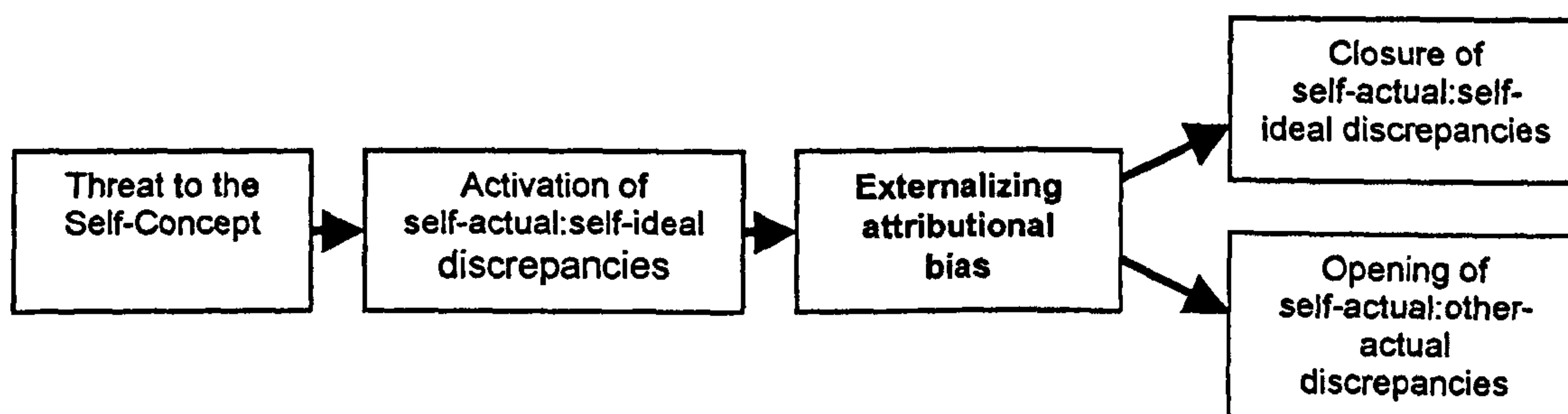
this may prevent such causes from being attributed to oneself. Further, they have proposed that the attributional style of people with persecutory delusions reflects an exaggeration of the “self-serving bias” frequently observed in ordinary subjects (e.g. Fiske & Taylor, 1991), which normally has the function of protecting the individual from feelings of low self-esteem.

The idea that persecutory delusions act as a defence against low self-esteem is in keeping with earlier psychodynamic accounts, which view persecutory delusions as attempts to defend the self against threats that originate from the deluded person’s own psyche (Winters & Neale, 1983); and with the suggestion that paranoid delusions are a form of “camouflaged depression” (Zigler & Glick, 1988).

1.8.6 Self-Discrepancy Theory

In an attempt to understand the respective roles of the self and attributional processes in persecutory delusions, Bentall et al (1994) proposed a model based on Higgins’ (1987) Self-Discrepancy Theory (SDT), see Figure 1:

Figure 1: Model showing the relationship between self-discrepancies and attributional processes in paranoid patients (from Bentall, Kinderman & Kaney, 1994)



Higgins (1987) argued that we have internal cognitive representations of our **actual-selves** (our perception of how we believe we actually are), our **ideal-selves** (how we would like to be), and **ought-selves** (how we feel we ought to be). According to SDT, discrepancies between these different self domains are associated with different affective states. In support of this, research has found that clinically anxious individuals report discrepancies between the actual-self and the ought-self; whereas clinically depressed individuals report discrepancies between the actual-self and the ideal-self (e.g. Scott and O'Hara, 1993). Discrepancies may also exist between different viewpoints on the self, for example between the self as perceived by oneself (**actual-self**) and the self as apparently perceived by a significant other (**actual-other**).

As mentioned earlier, paranoid patients are particularly attentive to material relating to personal threat. Drawing on Higgins's account, Bentall et al (1994) argued that such threatening stimuli are likely to activate an underlying or implicit negative self-representation, triggering discrepancies between the patients' actual self-representations and their ideal and ought self-representations. They hypothesized that, for paranoid patients, such situations evoke external causal attributions (e.g. "I am not responsible for bad things that are happening to me, other people are") which result in a reduction of this discrepancy. In this way, the negative consequences of failing to compare well with self-ideals and ought-selves are avoided. However, the consequence is that discrepancies are activated between self-perceptions and perceived

others' view of self (actual-self: actual-other discrepancies) (e.g. "other people must hate me"), contributing to negative perceptions of the intentions of others and, therefore, paranoia.

Using measures derived from Higgin's (1987) work to examine the explicit self-discrepancies of patients with persecutory delusions, compared with non-patients and depressed controls, Kinderman & Bentall (1996b) found support for their model; in particular, marked discrepancies between self-perceptions and the believed perceptions of parents about the self were found in paranoid patients (parents were chosen because they were the only "others" which all participants were able to report about).

1.8.7 Self-Consciousness and Paranoia

According to Fenigstein & Vanable (1992), self-consciousness may heighten the tendency to engage in paranoid inferences. In one study, they found that self-directed attention, especially toward the self as a social object, was related to an increase in paranoid thinking in student participants. Individuals who were rated as high in public self-consciousness, compared to those low on that dimension, were more likely to endorse certain beliefs and attitudes characteristic of paranoia, as defined by several clinical criteria. They also found that individuals predisposed toward paranoid thoughts had a heightened sense of being observed: and it was demonstrated that the sense of being watched by others was a function of self-attention. Previous research has found that persons high in self-consciousness are especially sensitive to rejection (Fenigstein, 1979). Fenigstein & Vanable (1992) proposed that self-

consciousness, by activating self-knowledge, acts as a priming mechanism so that new information is more likely to be interpreted in self-referent terms. Thus, the activation of self-schema actively biases the perception of others to make it appear as if their behaviour, real or imagined, is somehow related to or targeted toward the self.

Using these ideas, Bentall et al (1994) have suggested that paranoid patients suffer from an underlying negative self-schema which, when primed by a personally threatening event, triggers the abnormal externalizing attributional response described earlier.

1.8.8 Implicit Measure of Attributional Style

In an attempt to elicit attributions from paranoid patients without activating self-discrepancies, Lyon et al (1994) used a non-obvious measure of attributional style - the Pragmatic Inference Task (Winters & Neale, 1985) – which was presented to participants as a test of memory. In contrast to previous findings (Kaney & Bentall, 1989), deluded participants, like depressed individuals, predominantly made internal attributions for negative events. However, on a traditional attributional style measure (ASQ), the deluded participants made external attributions for negative events, as previously found by Kaney & Bentall (1989). It was concluded that the exaggerated self-serving bias found in people with persecutory delusions was absent when deluded patients were asked to make implicit rather than explicit judgements of causality.

Kinderman (1994) indirectly assessed the implicit self-concept of deluded individuals using an emotional Stroop task (Stroop, 1935). He found that deluded patients demonstrated substantial interference with the colour naming of both negative and positive trait words similar to that of depressed patients, indicating that such words were particularly salient for them.

These studies provide support for the view that people with persecutory delusions have a fragile self-concept which they protect by means of a self-serving bias when overt methods of accessing the self-concept are employed; but that their fragile self is revealed when more covert methods are used.

1.8.9 Research using The Internal, Personal and Situational Attributions Questionnaire (IPSAQ)

Despite the ASQ's success in identifying attributional abnormalities in depression and paranoia, the reliabilities of its six subscales (internality, globalness, and stability for positive and negative events) have consistently been found to be poor, particularly the internality dimension (Reivich, 1995). It has also been noted that the ASQ appears to confound two types of external attributions: those implicating bad luck or situational factors, and those implicating the actions of others. As a result, Kinderman & Bentall (1996a) have developed a new scale: the IPSAQ. They propose that three distinct attributional loci can be identified on the internality dimension: an **internal** locus of control (attributing the causes of events to oneself), an **external-personal** locus (attributing the causes of events to the actions or omissions of

identifiable others), and an **external-situational** locus (attributing the causes of events in terms of circumstances or chance). So, for example, if one is asked to give an explanation for the negative event “you are late for an appointment”, it is possible to attribute this externally either to a person (e.g. my partner made me late) or to a non-personal situation (e.g. the rain made the traffic terrible).

The IPSAQ provides two psychologically meaningful scores: an **externalizing bias (EB)** score and a **personalizing bias (PB)** score. A positive EB score indicates strong self-serving biases (i.e. blaming oneself less for negative events than for positive events). A PB score of greater than 0.5 represents a greater tendency to make personal-external as opposed to situational-external attributions for negative events. Kinderman & Bentall (1996a) found that all six subscales had acceptable levels of internal reliability (mean $\alpha = 0.675$), which were substantially superior to those reported for the internality subscales of the ASQ (mean $\alpha = 0.438$) (Reivich, 1995); although no data for test-retest reliability were reported. The validity of the IPSAQ was also supported by the differential associations between the three predominant types of attributions, and other significant variables: for example, EB correlated significantly with the negative internality subscale of the ASQ, Spearman's $r = 0.39$, $p < .002$.

Using this measure, and consistent with previous findings, it was found that depressed patients tended to attribute negative social events to internal (self-blaming) causes; in contrast, both the paranoid and non-patient participants

showed evidence of a robust “self-serving” bias, attributing positive events more often to internal causes and negative events to external causes. However, whereas non-patient participants tended to choose situational external attributions for negative events (e.g. a friend ignored me because she was preoccupied with her own thoughts and didn't see me), paranoid individuals tended to exhibit a personalizing bias: a tendency to locate blame in other individuals when things go wrong (e.g. a friend ignored me because she wanted to upset me) (Kinderman & Bentall, 1997a). Thus, while non-patients are better at making excuses which neither implicate themselves or others, the paranoid person's tendency to blame other people for negative events may lead him/her to believe that others have hostile intent toward them: thus maintaining their negative views of other people and contributing to the maintenance of their persecutory delusions.

1.8.10 Linking Attributional Research to the Self-Discrepancy Theory Model

Bentall & Kinderman (1998) linked the above findings back to the model described in section 1.8.6, suggesting that when people with paranoid beliefs are faced with events which threaten to activate discrepancies between how they believe they actually are and how they would like to be/ how they feel they ought to be (actual-self: ideal-self/ought-self discrepancy), they tend to make personal-external attributions for such negative events. Such attributions result in a reduction of these discrepancies but inevitably trigger discrepancies between self-perceptions and how they think others see them (actual-self: actual-other discrepancy).

A recent study by Kinderman and Bentall (submitted) of non-patient participants provides support for this view. The impact of attributions on self-representation, and vice versa, was investigated. As predicted, it was found that personal-external attributions for negative events were associated with increased actual-self: actual-other discrepancies, while situational-external attributions for negative events were associated with a reduction in actual-self: actual-other discrepancies. These findings have yet to be investigated with people with persecutory delusions.

1.8.11 Theory of Mind Deficit

The ability to be aware of the mental state of others has been referred to as "Theory of Mind" (ToM) (Premack & Woodruff, 1978). A number of investigators have postulated that ToM deficits play a causal role in autism and Asperger's syndrome (e.g. Baron-Cohen, 1995; Happé & Frith, 1994). Impairments in communication and the key clinical features of schizophrenia have also led Frith (1992) to suggest that there is a ToM deficit in schizophrenia. In support of this, Frith & Corcoran (1996) found that people with delusions of persecution had difficulties representing the beliefs, thoughts and intentions of other people, but that such a "deficit" did not occur for patients currently in remission.

More recently, Bentall & Kinderman (1998) have hypothesized that the paranoid patient's personalizing bias might reflect a difficulty in understanding situational factors due to a ToM deficit. External-situational attributions for

negative social interactions require us to take the other person's perspective (e.g. my friend ignored me because s/he was stressed, or feeling ill, or having a particularly bad day). However, if deluded individuals are unable to take the other person's perspective and are unwilling to blame themselves for the negative events (internal attribution), then they are left with only one other option, that is an external-personal attribution (e.g. the friend deliberately set out to hurt me). Such an account helps to explain why paranoid patients often believe that others have malevolent intent, rather than just reporting that they cannot understand what others think.

In a recent study (Kinderman, Dunbar, & Bentall, 1998), non-patient participants completed the Imposing Memory Task (IMT), designed to assess mentalizing (ToM) ability, and the IPSAQ. The IMT consists of a series of five stories: four of which involve complex social situations that require listeners to understand the perspective and intentions of the actors; the fifth story involves only one participant, an unfortunate man who falls asleep while smoking a cigarette. Participants are then asked questions concerning ToM elements of the stories (i.e. the expectations or beliefs of the actor(s)) and questions tapping memory for information contained in the stories. Consistent with their hypotheses, Kinderman and colleagues found that individuals who were poor at inferring the mental states of others attributed significantly more negative events to another person, as opposed to the situation. However, one must be cautious about generalizing from normal participants to patients with a psychiatric disorder.

Two studies of paranoid patients have failed to find evidence of a specific theory of mind deficit (Sarfati, Hardy-Baylé, Besche & Widlöcher, 1997; Langdon, Michie, Ward, McConaghy, Catts & Coltheart, 1997). Such evidence supports the view that theory of mind deficits are only present in *some* paranoid patients and may not be specific to persecutory delusions (Garety & Freeman, 1999).

Empirical testing of such ideas is in its early stages at present and needs further study.

1.8.12 Current Research Limitations

The IPSAQ investigates causal attributions for both positive and negative events which refer to the self (self-referent). In this study, the IPSAQ will be modified in order to investigate both positive and negative events which refer to another person (other-referent), in addition to the self-referent events described in the original study. Furthermore, while the IPSAQ was reported to have good internal reliability for all six subscales (Kinderman & Bentall, 1996a), test-retest reliability was not reported. The test-retest reliability of the modified IPSAQ used in this study will be investigated.

1.8.13 Current Theoretical Limitations

Recent research casts doubt on the hypothesis that persecutory delusions function as a defence against low self-esteem (Freeman et al, 1998). As an alternative proposition, they suggest that self-esteem is more closely related to other factors such as depression. Firstly, evidence did not strongly support the

hypothesis made by Bentall and colleagues (Bentall et al, 1994; Kinderman & Bentall, 1996a) of high or normal self-esteem in people with persecutory delusions: low self-esteem, in all domains of the self-concept, was found in over two-thirds of the participants with persecutory delusions; indicating that such delusions do not maintain normal self-esteem. Secondly, the authors failed to find an association between self-esteem and changes in delusional conviction over time; whereas the defence account would predict that the delusion and self-esteem co-vary. Furthermore, findings indicated that self-esteem scores were inversely related to depression scores in paranoid patients, as would be expected in the general population; in contrast to Bentall's prediction of high depression and high self esteem in these patients (Bentall, 1994). These findings were said to favour a so-called "normal emotional processes" account, rather than defensive processes.

However, one-third of the paranoid participants did report normal self-esteem, and higher levels of conviction in their delusional belief, and lower levels of depression and anxiety. This indicates that the defence account may apply to a sub-group of people with persecutory delusions (Freeman et al, 1998). The authors concluded that whilst there is much support for an externalizing bias for negative events in people with persecutory delusions, there is not yet strong empirical support that this bias serves a defensive function; although it is possible that the defence account applies to a sub-group.

As a result of this recent research, this study will also explore the relationship between self-esteem and depression in participants with persecutory delusions, compared with depressed and non-patient participants.

1.9 Summary of Research and Aims of this Study

To summarize: the work of Bentall, Kinderman and others, discussed above, has clearly shown that paranoid patients show attributional biases that are distinct from those of depressed and non-patient controls; and that people with persecutory delusions exhibit attentional biases concerning material relating to personal threat. However, although attribution research in anxiety and eating disorders has suggested that cognitive biases are mainly found in relation to self-referent events and not events relating to another person (other-referent) (Butler & Mathews, 1983; Cooper, 1997), the distinction between attributional biases for self-referent events and for other-referent events has not been investigated in patients with paranoid beliefs. If it is found that paranoid individuals are able to make "non-paranoid" inferences for negative events happening to others, this could have important implications for the refinement of Cognitive Therapy approaches for this client group.

In addition, recent research casts doubt on the defence account of paranoia, with suggestions that the relationship between self-esteem and depression in people with persecutory delusions reflects normal emotional processes.

Thus, the present study has four aims:

- 1) To assess the reliability (test-retest and internal), acceptability and face validity of a modified version of Kinderman & Bentall's (1996a) IPSAQ, incorporating the dimension: self- versus other-referent events.
- 2) To replicate the findings of Kinderman & Bentall (1997a) that paranoid individuals, compared with non-patients, tend to exhibit a personalizing bias for negative self-referent events (i.e. locating blame in others), and tend to exhibit an exaggerated self-serving bias for positive self-referent events (i.e. taking credit for themselves).
- 3) To investigate whether paranoid, depressed and non-patient individuals make differential causal attributions depending on whether events refer to themselves (self-referent) or to another person (other-referent).
- 4) To explore the relationship between levels of self-esteem and depression scores across the three groups.

1.10 Hypotheses and Questions

The following seven hypotheses will be tested:

Hypothesis 1: For items relating to themselves (“self-referent”), paranoid participants will have a greater tendency, than non-patient participants, to attribute the causes of positive events to internal causes.

Hypothesis 2: For items relating to themselves (“self-referent”), paranoid participants will have a greater tendency to attribute the causes of negative events to external-personal causes, compared with depressed and non-patient controls.

Hypothesis 3: For items relating to themselves (“self-referent”), depressed participants, compared with paranoid and non-patient participants, will have a greater tendency to attribute the causes of positive events to external causes.

Hypothesis 4: For items relating to themselves (“self-referent”), depressed participants, compared with paranoid and non-patient participants, will have a greater tendency to attribute the causes of negative events to internal causes.

Hypothesis 5: For items relating to themselves (“self-referent”), non-patient participants will have a greater tendency to attribute the causes of positive events to internal causes, compared with depressed participants.

Hypothesis 6: For items relating to themselves (“self-referent”), non-patient participants will have a greater tendency to attribute the causes of negative events to external-situational causes, compared with depressed and paranoid participants.

Hypothesis 7: For items relating to the perspective of another person (“other-referent”), it is expected that there will be no significant differences between the three groups (depressed, non-patient, and paranoid) in terms of their causal attributions for a) positive events, and b) negative events.

In addition, the following questions will be explored:

Question 1: What are the levels of self-esteem reported by paranoid participants, depressed and non-patient participants?

Question 2: Is there an association between self-esteem and depression scores in the three groups?

SECTION 2

METHOD

2. METHOD

2.1 Overview of Method Section

Details of the selection of participants are given followed by the design of the study: then there is a description of the measures used. Subsequently, the procedure is outlined and ethical considerations discussed.

2.2 PARTICIPANTS

2.2.1 Pilot Study Participants

Twenty-one non-patients (13 females, 8 males), reporting no history of psychiatric disturbance, were recruited via informal contacts. They volunteered with full knowledge as to the nature of the research; and were excluded from participating in the main study.

2.2.2 Main Study Participants

Three groups of participants were approximately matched in terms of gender, age and intelligence. Participants were excluded if they reported and/or were known to be involved in current substance misuse.

GROUP 1: Experimental group (paranoid patients): 20 individuals (6 females, 14 males) receiving either in-patient or out-patient psychiatric treatment and currently experiencing persecutory delusions. Participants were recruited from either in-patient wards or through CMHT's in the Oxfordshire region. All met DSM-IV criteria for paranoid schizophrenia. In each case, the presence of delusional beliefs was confirmed by the researcher on the basis of

a brief interview (see section 2.4.3 below: Diagnostic measures); and staff confirmed that the patient was currently experiencing persecutory delusions. Patients who were unable to participate in an interview of at least 20 minutes (e.g. due to marked thought disorder) were excluded.

GROUP 2: Patient control group (depressed patients): 21 individuals (10 females, 11 males) receiving either in-patient or out-patient treatment for depression. Participants were recruited from either the Oxford Psychology Department or through CMHT's in the Oxfordshire region. All met DSM-IV criteria for a major depressive episode (see section 2.4.3 below: Diagnostic measures), and had BDI scores above a cut-off of 15. Participants were excluded if there was an indication of a differential diagnoses involving psychosis: assessed by self-reports of psychotic symptoms, and confirmed by staff.

GROUP 3: Non-patient control group: 21 individuals (8 females, 13 males) were recruited via informal contacts. In order to control for levels of depressed mood, participants were only included in this group if their BDI scores were less than a cut-off of 15, and they did not meet the DSM-IV criteria for a major depressive episode. Participants were excluded if they reported a history of psychiatric disturbance requiring treatment or the presence of psychotic symptoms.

2.3 Design

The main study has a cross sectional, between groups design. The independent variable was group membership. The dependent variables were the number of self- and other- attributions made, for positive and negative events, to internal, personal, situational or external causes.

2.4 MEASURES

PART 1: PILOT STUDY

2.4.1 The Modified Internal, Personal and Situational Attributions Questionnaire (IPSAQ-M)

The IPSAQ-M was derived from the IPSAQ developed by Kinderman & Bentall (1996a), which was shown to have good levels of reliability and validity, in a preliminary psychometric investigation (for details, see Introduction: section 1.8.9).

The IPSAQ-M has 32 items; 16 describing events from the perspective of the self (eight positive; eight negative); and 16 describing events from the perspective of another person (eight positive; eight negative). For each item the respondent is required to generate a single, most likely, causal explanation for the situation described and then to categorize this cause as being either internal, personal or situational.

The procedure for modifying the IPSAQ for this study, and test-retest reliability of the IPSAQ-M, will be reported in the Procedure section below.

PART 2: MAIN STUDY

The following measures were administered to all participants in the following order:

2.4.2 Sociodemographic Data

This consisted of: gender, age, ethnic origin, marital status, number of children, household composition, type of property currently living in, highest educational qualification achieved, and current employment status (see Appendix 1).

2.4.3 Diagnostic Measures

The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-CV: First, Spitzer, Gibbon & Williams, 1997) is a semi-structured interview for making the major DSM-IV diagnoses (APA, 1994).

1. Questions from Section B: Psychotic and Associated Symptoms (Questions B1 to B9: see Appendix 2) were used to confirm diagnostic classification for the paranoid group; and to confirm that the depressed and non-patient participants did not have a differential diagnoses involving psychosis.

2. Questions from Section A: Mood Episodes (Questions A1 to A9: see Appendix 2) were used to confirm that the depressed participants met the DSM-IV criteria for a major depressive episode (and to confirm that the non-patient participants did not).

2.4.4 Assessment of Alcohol and Other Substance Use

All participants were asked about their usual drinking habits, and were asked whether they had taken any street drugs in the past two weeks (see Appendix 3). For the patient groups, additional confirmation of the absence of current substance misuse was sought from keyworkers.

2.4.5 Depression Measure

The Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock & Erbaugh, 1961) is a 21-item self-report scale assessing level of depressed mood, and has been extensively used in depression research. It has been shown to have good internal reliability (Rehm, 1988), and to be valid for use with both clinical (Williams, Barlow & Agras, 1972) and non-patient groups (Blumberg, Oliver & McClure, 1978).

2.4.6 Estimation of Intellectual Functioning

The National Adult Reading Test (NART; Nelson, 1982) was used in this study to control for possible differences in intellectual ability across the groups. It is a brief measure of the pronunciation of 50 irregularly spelled English words, which was originally developed to provide an estimate of premorbid intelligence in brain-injured patients. The NART has been shown to correlate well with other measures of intelligence (Crawford, Parker, Stewart, Beeson & DeLacey, 1989); and has high levels of reliability and validity, when used with general population samples and with people with a diagnosis of schizophrenia (O'Carroll, Walker, Dunan & Murray, 1992).

2.4.7 Measure of Attributional Style

The final version of the IPSAQ-M used in the main study (see Appendix 4) had 36 items: 18 (nine positive; nine negative) describing events from the perspective of the self; and 18 (nine positive; nine negative) describing events from the perspective of another person. For each item the respondent was required to generate a single, most likely, causal explanation for the situation described and then to categorize this cause as being either internal, personal or situational.

2.4.8 Anxiety Measure

The Beck Anxiety Inventory (BAI) (Beck, Epstein, Brown & Steer, 1988) is a 21-item self-report scale used to measure levels of anxiety. It has good psychometric properties and is a well established measure of anxiety symptoms.

2.4.9 Self-Esteem Measure

The Self-Concept Questionnaire (Robson, 1989) is a 30-item self-report questionnaire which measures seven components of self-esteem: subjective sense of significance, worthiness, appearance and social acceptability, competence, resilience and determination, control over personal destiny, and the value of existence. It has been shown to have good internal and test-retest reliability, and high convergent validity with the widely used Rosenberg (1965) scale.



2.5 PROCEDURE

PART 1: PILOT STUDY

2.5.1 Modifying the Internal, Personal and Situational Attributions Questionnaire (IPSAQ)

The original IPSAQ has 32 items; 16 describe positive events:

Example: *A friend gave you a lift home - What caused your friend to give you a lift home ? (please write down the one major cause).....*

Is this: a) something about you? b) something about the other person or other people? c) something about the situation (circumstances or chance)?

and 16 describe negative events:

Example: *A friend talked about you behind your back - What caused your friend to talk about you behind your back ? (please write down the one major cause).....*

Is this: a) something about you? b) something about the other person or other people? c) something about the situation (circumstances or chance)?

In the modified IPSAQ (IPSAQ-M) only half of the original items were used; eight describing positive events and eight describing negative events. The researcher sought reliability information from the authors of the original IPSAQ (Kinderman and Bentall), in order to retain those items which were most reliable. As this was unsuccessful, the items were chosen at random.

The first part of the questionnaire consisted of 16 items, describing events from the perspective of the self (eight positive; eight negative). In the second

part of the questionnaire, a further 16 items were added, in which the wording of the first 16 items was slightly modified so that the questions referred to the perspective of another person, rather than the self (again, eight describing positive events and eight describing negative events):

Example: *A friend talked about Jo behind his/her back - what caused the friend to talk about Jo behind his/her back. (please write down the one major cause).....*

Is this: a) something about Jo? b) something about the other person or other people? c) something about the situation (circumstances or chance)?

2.5.2 Piloting the Questionnaire

The IPSAQ-M was piloted on 21 non-patient, voluntary participants, and re-administered one-two weeks later.

The time taken to complete the questionnaire was measured, and each participant was asked to comment on the content of the questionnaire, in particular, to establish if any questions offended or upset them. The aim was to ascertain the acceptability and face validity of the revised questionnaire, as well as test-retest reliability.

2.5.3 Pilot Study Data Analysis

1) Test-Retest Reliability

All of the participants agreed to be retested on the IPSAQ-M one-two weeks later (N=21). Test-retest reliability of the IPSAQ-M was examined by drawing

up contingency tables on a question by question basis: for each question, the percentage of participants achieving agreement between their first questionnaire attributions and their retest questionnaire attributions, was calculated (see Appendix 5 for full details). As the data was categorical, more detailed analyses was not possible.

A mean of 69.0% (SD 16.6) of participants achieved agreement between their first questionnaire attributions and their retest questionnaire attributions, with a range of: 47.6%-100% (10/21-21/21 participants). Agreement was achieved in 15 or more (70+%) participants for 19/32 (59%) of the questions. These results indicate reasonable test-retest reliability for the IPSAQ-M.

2) Internal Reliability

Cronbach's alpha was calculated to determine the internal reliability for the 12 IPSAQ-M subscales, as shown in Table 1:

Table 1: Internal reliability - alpha values for the 12 IPSAQ-M subscales

Subscale	Reliability co-efficient (α)
Self-referent-Positive-Internal	0.61
Self-referent-Positive-Personal	0.39
Self-referent-Positive-Situational	0.56
Self-referent-Negative-Internal	0.73
Self-referent-Negative-Personal	0.51
Self-referent-Negative-Situational	0.60
Other-referent-Positive-Internal	0.40
Other-referent-Positive-Personal	0.55
Other-referent-Positive-Situational	0.52
Other-referent-Negative-Internal	0.70
Other-referent-Negative-Personal	0.64
Other-referent-Negative-Situational	0.58

The results of the analysis show that internal reliability was variable across the subscales (range: 0.39-0.73), indicating low to moderately high internal consistency across the subscales.

3) Other Findings

Time taken to complete the pilot questionnaire ranged from 20-45 minutes, with an average time of 30 minutes. All participants confirmed that none of the questions offended or upset them. The acceptability and face validity of the revised questionnaire was supported.

2.5.4 Alterations to the IPSAQ-M

As explained in section 2.5.1, the original IPSAQ was further developed for this study to incorporate another dimension: self- versus other-referent events. As a result of the pilot study (reliability analysis and participants' feedback), a number of additional alterations were made to the IPSAQ-M:

- Four additional items were added with the aim of improving the questionnaire's internal reliability: two self-referent items from the original IPSAQ were chosen - these were worded in a similar way to two of the most reliable items found in the pilot study (see Appendix 5); their equivalent other-referent items were also added. Thus, the final IPSAQ-M had 36 items: 18 (nine positive; nine negative) describing events from the perspective of the self; and 18 (nine positive; nine negative) describing events from the perspective of another person.

- An Example Page was added at the beginning of the questionnaire to improve the clarity of the instructions.
- The order of the questions was changed following feedback from participants. In the pilot questionnaire the self-referent items were listed first, then the equivalent other-referent items were listed in the second part. In the final IPSAQ-M, questions were ordered in the following pattern: self-referent positive item, other-referent negative item, self-referent negative item, other-referent positive item, self-referent positive item, and so on.
- For other-referent items, the character's name was changed from "Jo" to "Sam" following feedback indicating that Sam was more gender-neutral than Jo.

PART 2: MAIN STUDY

2.5.5 Mode of Recruitment for the Main Study

Recruitment occurred within the Oxfordshire Region.

- i) The research was presented to mental health professionals (including: clinical psychologists, consultant psychiatrists, community psychiatric nurses, social workers and in-patient psychiatric nurses) at team, ward or departmental meetings. In particular, the feasibility of obtaining participants was discussed.
- ii) Potential participants for the two patient groups were identified by mental health professionals. Key-workers were contacted, to gain their verbal approval before contacting the client, and to decide on the appropriate way to do this in each case. The keyworker either asked the client about the study personally, giving the client an Information Sheet which explained about the study (Appendix 6); or asked the client if they would be happy for the

researcher to contact them directly (by phone or letter) to discuss the study further.

iii) If the client agreed to participate, it was determined whether s/he met the appropriate diagnostic classification by discussion with his/her responsible clinician and keyworker. Furthermore, the written permission was sought from consultant psychiatrists (where they had Responsible Medical Officer (RMO) responsibility) or from other responsible clinicians (e.g. CPA keyworkers), (Appendix 7).

iv) Participants were then sent an appointment letter, enclosing an Information Sheet and a Consent Form (Appendix 8), as written permission was required before the interview could commence.

vi) The participants' General Practitioners were also sent letters informing them of their patients' involvement in the research (Appendix 9).

vii) Non-patient participants were recruited via informal contacts on a voluntary basis.

2.5.6 Interviews

All participants were interviewed individually in a private room, over one or two meetings (depending on the individual). Patient participants were seen in either in-patient wards, out-patient centres, or at their local GP surgery. Non-patient participants' were seen at home or any other mutually agreed location. Testing procedure and order of presentation of each measure was identical for each participant (see Measures section above). A record of delusional themes, reported by each paranoid participant and/or confirmed by staff, was also kept (Appendix 11).

In addition, 40% of depressed and non-patient participants were asked for permission to retest them on the IPSAQ-M one-two weeks later.

2.6 ETHICAL CONSIDERATIONS

2.6.1 Ethics Committee

Ethical approval from the Oxfordshire Psychiatric Research Ethics Committee (OPREC) was applied for and granted (Appendix 10).

2.6.2 Consent

The research was explained thoroughly to each participant, verbally and by written information. Participants were given the opportunity to ask questions about the research and were given a clear choice as to whether or not they participated in the study. Written consent forms were completed by the responsible clinician and by patient participants prior to interviews.

2.6.3 Confidentiality

All information obtained during this study remained confidential. Participants were allocated a code number known only to the researcher and all names were removed when compiling the information. The material was also kept secure until the end of the study when any identifying information was destroyed.

2.6.4 Distress

Clinical judgement was used throughout interviews in order to monitor potential distress. Any signs of distress were taken seriously and participants were offered the opportunity to take a break, or to discontinue.

2.6.5 Safety

The researcher was very aware of safety issues and took appropriate steps in order to minimize any risks to safety during questionnaire administration.

SECTION 3

RESULTS

3. RESULTS

3.1 Overview of Results Section

All the results presented here relate to the main study (see Method section 2.5.3 for pilot study data analysis). After the overview of the data analyses, general details about the sample, including descriptive and diagnostic data are presented; followed by reliability analyses of the IPSAQ-M used in the main study. Subsequently, statistical analyses relating to the seven main hypotheses are reported; and statistical analyses relating to the two exploratory questions. Finally, additional interesting findings are presented.

3.2 Overview of Data Analyses

- All statistical analyses were conducted using SPSS for Windows. One-way analyses of variance (ANOVAs) and three way repeated measures ANOVAs were conducted on interval data: however, as ANOVAs are regarded to be robust to departures from normality and equality of variance (e.g. Norusis,1997), exhaustive tests were not conducted for these two assumptions in this study.
- Sociodemographic group differences in: (1) age and estimated intellectual functioning were investigated with one-way ANOVAs; and (2) gender were investigated with a Chi-square test as the data was categorical.
- Frequencies were calculated for the remaining sociodemographic data, and for diagnostic data. No further statistical analyses were conducted as these variables were collected for descriptive purposes only.

- A one-way ANOVA and 95% confidence intervals were conducted on the BDI scores in the three groups.
- With regard to the IPSAQ-M used in the main study, test-retest reliability was examined by drawing up contingency tables on a question by question basis, and Cronbach's alpha was used to calculate internal reliability.
- To test the main research hypotheses, three-way repeated measures ANOVAs were computed for internal, personal, situational and external attributions, respectively. In addition, the mean number of internal, personal, situational and external attributions, for self- and other-referent items, were calculated. Furthermore, one-way ANOVAs were conducted on externalizing bias scores and personalizing bias scores in the three groups.
- The following analyses were conducted to test the exploratory questions: (1) a one-way ANOVA to investigate levels of self-esteem in the three groups; (2) 95% confidence intervals for the mean self-esteem score in each group; and (3) a Pearson Correlation to explore the association between self-esteem and depression scores in the three groups.
- Finally, a one-way ANOVA and 95% confidence intervals were conducted to investigate anxiety levels in the three groups.

3.3 Response Rates

Agreement to participate in this study was obtained from 68 individuals. Of these participants, the following did not participate in the study:

<u>Participant type:</u>	<u>Reason for non-participation in the study:</u>
2 Paranoid patients	Refusal to complete IPSAQ-M
2 Paranoid patients	Did not attend two appointments
1 Depressed patient	Presence of psychotic symptoms
1 Non-patient	Currently receiving psychiatric treatment

A further seven individuals opted not to participate, when asked directly by the researcher. However, it was not possible to ascertain information about individuals who declined to participate in this study, when asked by mental health professionals, or who were not put forward by staff due concerns about client safety or the safety of others.

3.4 Item Non-Response

62 participants completed all the measures described in the Measures section, with the exception of one paranoid patient who refused to complete the BAI and the SCQ.

3.5 Sociodemographic Data

Gender distribution, and age and NART score means (and ranges), across the groups, can be seen in Table 2 below. The three groups did not differ significantly in age, $F(2,59) = 2.04$, NS; premorbid intelligence (NART), $F(2,59) = 0.74$, NS; or gender, $\chi^2(2, N=62) = 1.35$, NS.

From Table 2, it can also be seen that all participants, except two in the paranoid group, described their ethnic origin as white. There were differences between the three groups in terms of marital status, number of children, household composition, and highest educational qualification achieved. In particular, the paranoid patients were less likely to be married/cohabiting and more likely to be single, less likely to have children, more likely to be living in a shared house/hostel, less likely to have a professional qualification and more likely to be on DLA/incapacity/sickness benefit.

Table 2: Sociodemographic Data

VARIABLES	Group 1 (paranoid)	Group 2 (depressed)	Group 3 (non-patient)
No. of participants	20	21	21
Gender			
Female	6	10	8
Male	14	11	13
Mean age in years (Range)	37.9 (23-62)	41.7 (22-61)	35.9 (25-58)
Mean National Adult Reading Test score (Range)	104.7 (70-127)	109.1 (94-124)	105.4 (76-122)
Ethnic origin			
White	18	21	21
Indian	1	0	0
Chinese	1	0	0
Marital status			
Married/Cohabiting	3	11	14
Widowed	1	0	0
Divorced	1	4	3
Separated	0	1	1
Single	15	5	3
Number of children			
None	18	9	11
1	0	3	4
2	1	3	5
3	1	6	1
Household composition			
Spouse/partner/family	3	11	14
Children only	1	0	0
Parent(s)	5	3	4
Other family member	2	0	0
Friend(s)	0	1	0
In shared house/hostel	7	2	0
On own	2	4	3
Highest educational qualification achieved			
None	3	3	1
CSEs	2	2	1
O-levels/GCSEs	7	2	3
A-levels/equivalent	4	4	3
Degree	4	3	5
Other professional qualification	0	7	8
Social class based on occupation			
Professional	0	1	4
Managerial/technical	0	5	8
Skilled non-manual	3	4	4
Skilled manual	1	4	2
Partly skilled	2	0	2
Unemployed	1	1	0
Student loan/grant	0	1	0
Benefits: DLA/incapacity/sickness	13	5	1

3.6 DIAGNOSTIC DATA

3.6.1 Presence/ Absence of Psychotic Symptoms

Table 3 shows that all the participants in the paranoid group reported the presence of persecutory delusions, also confirmed by staff (for a record of paranoid patients' delusional themes, see Appendix 11). The concurrence of a number of different types of delusions and hallucinations was also reported (varying between individuals) as shown in Table 3:

Table 3: Frequency of the presence of delusions/hallucinations reported by paranoid participants, measured using SCID-CV, Section B (N=20) †

<u>Type of delusion/hallucination</u>	<u>Frequen cy</u>	<u>Type of delusion/hallucination</u>	<u>Frequen cy</u>
Persecutory delusion	20	Thought broadcasting	8
Delusion of reference	19	Thought insertion/withdrawal	8
Auditory hallucination	14	Delusions of being controlled	8
Grandiose delusion	11	Religious delusion	8
Visual hallucination	11	Tactile hallucination	5
Delusions of guilt	9	Hallucination of smell/taste	5
Somatic delusion	9		

†It must be noted that all paranoid participants reported experiencing more than one delusion/hallucination

Furthermore, a diagnosis of paranoid schizophrenia was reported, by their responsible clinician and keyworker, for all 20 paranoid participants. Finally, none of the depressed or non-patient participants reported experiencing any psychotic symptoms.

3.6.2 Presence/ Absence of Symptoms of Depression

Table 4 confirms that all depressed group participants met the DSM-IV criteria for a major depressive episode, and had BDI scores above the cut-off of 15: also confirmed by staff. Major depressive episode was also found in 30% of the paranoid group, but not in any of the non-patients.

Table 4: Data confirming presence/ absence of depression across groups

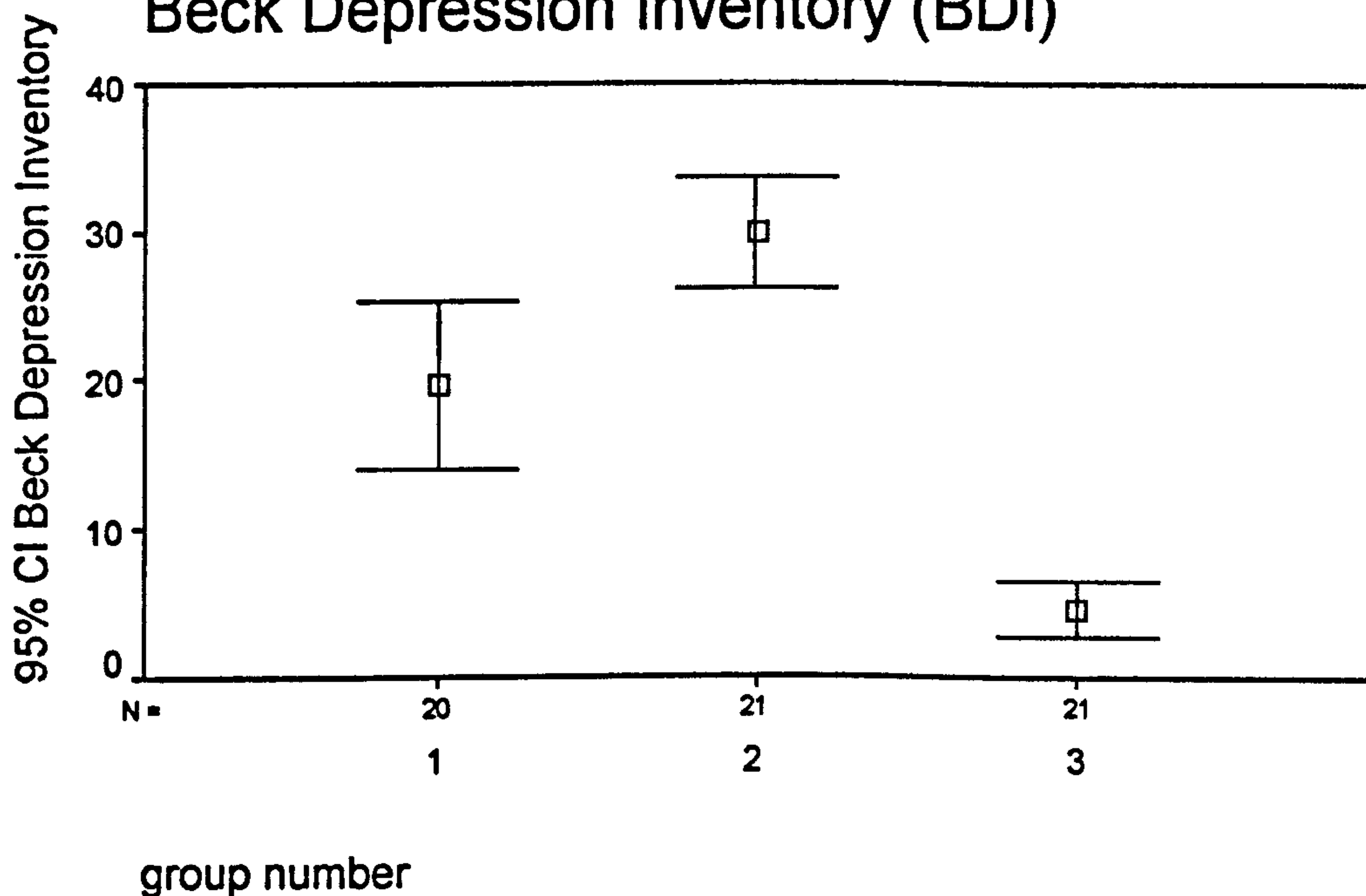
Variables	Group 1 (paranoid) N=20	Group 2 (depressed) N=21	Group 3 (non-patient) N=21
Number of participants in which Major Depressive Episode was confirmed (Percentage of the group)	6 (30%)	21 (100%)	0 (0%)
Mean BDI♦(Standard Deviation)	19.8 (12.1)	30.0 (8.4)	4.7 (4.1)
Range of BDI♦ scores	1-44	17-50	0-13
95% Confidence Intervals for the mean BDI♦ score: lower-upper range	14.1-25.4	26.1-33.8	2.8-6.5

♦ = Beck Depression Inventory

A one-way ANOVA conducted on the BDI scores revealed a significant difference between the groups, $F(2, 59) = 44.51, p < .0001$. Post-hoc Scheffé tests revealed significant differences between all three groups: the depressed group had significantly higher mean levels of depression than both the paranoid group ($p = .001$) and the non-patient group ($p < .0001$); and the paranoid group had significantly higher mean levels of depression than the non-patient group ($p = .001$).

95% confidence intervals for the mean depression score, based on this sample, are (26.14, 33.77) for depressed participants, (14.11, 25.39) for paranoid participants, and (2.80, 6.53) for non-patient participants. For the BDI, the entire intervals for both the depressed and paranoid groups fall within the clinical range (moderate to severe range, and mild to moderate, respectively); while the entire interval for the non-patient group falls within the non-clinical range (i.e. below the cut off of 15). Figure 2 shows these confidence intervals graphically:

Figure 2: 95% Confidence Intervals (CI) for Beck Depression Inventory (BDI)



1 = Paranoid Group; 2 = Depressed Group; 3 = Non-patient Group

3.6.3 Presence/ Absence of Alcohol or Other Substance Use

None of the participants in the sample reported current alcohol or other substance misuse: also confirmed by staff for the two patient groups.

3.7 RELIABILITY ANALYSIS

3.7.1 Test-Retest Reliability

Fifteen (36%) depressed and non-patient participants agreed to be retested on the IPSAQ-M one or two weeks later. As in the pilot study, test-retest reliability of the IPSAQ-M was examined by drawing up contingency tables on a question by question basis: for each question, the percentage of participants achieving agreement between their first questionnaire attributions and their retest questionnaire attributions, was calculated (see Appendix 12 for full

details). As in the pilot study, more detailed analyses was not possible because the data was categorical.

A mean of 65.0% (SD 22.0) of participants achieved agreement between their first questionnaire attributions and their retest questionnaire attributions, with a range of: 46.7%-93.3% (7/15-14/15 participants). Agreement was achieved in 11 or more (70+%) participants for 21/36 (58%) of the questions. These results indicate reasonable test-retest reliability for the revised version of the IPSAQ-M.

3.7.2 Internal Reliability

Cronbach's alpha was calculated to determine the internal reliability for the 12 IPSAQ-M subscales, as shown in Table 5 below. The results of the analysis show that, in the main study, acceptable levels of internal reliability were found for all 12 subscales when four additional items were added to the IPSAQ-M. These reliability statistics are similar to those reported in Kinderman & Bentall's (1996a) preliminary psychometric investigations.

Table 5: Internal reliability - alpha values for 12 IPSAQ-M subscales

Subscale	Reliability coefficient (α)
Self-referent-Positive-Internal	0.73
Self-referent-Positive-Personal	0.65
Self-referent-Positive-Situational	0.65
Self-referent-Negative-Internal	0.62
Self-referent-Negative-Personal	0.64
Self-referent-Negative-Situational	0.69
Other-referent-Positive-Internal	0.61
Other-referent-Positive-Personal	0.68
Other-referent-Positive-Situational	0.55
Other-referent-Negative-Internal	0.67
Other-referent-Negative-Personal	0.67
Other-referent-Negative-Situational	0.70

3.8 Research Hypotheses

Three-way repeated measures ANOVAs were computed for internal, personal, situational and external attributions, respectively. Each analysis had one between-subjects factor (group: three levels) and two within-subject factors (positive versus negative; self versus other). These analyses revealed several significant interactions, as shown in Table 6 (see Appendix 13 for full details). One-way or two-way ANOVAs were not conducted, to reduce the possibility of type one errors. Instead, the following Tables (Tables 7&8) and Figures (Figures 3, 4, 5 & 6) (which show the mean number of internal, personal, situational and external attributions for self- and other-referent items) were used to help identify the direction of the significant interactions found in the repeated measures ANOVAs, and to establish whether or not the Hypotheses stated in the Introduction are supported in this study.

Table 6: Repeated measures ANOVA (F-values & Significance levels)

Choice of attribution	Source of variation	F-value	Significance level
Internal	SelfOther	0.18	NS
Internal	SelfOther x GroupNo.	0.93	NS
Internal	PositiveNegative (PosNeg)	23.19	< 0.0001
Internal	PosNeg x GroupNo.	10.37	< 0.0001
Internal	SelfOther x PosNeg	9.14	0.004
Internal	SelfOther x PosNeg x GroupNo.	10.15	< 0.0001
Personal	SelfOther	0.83	NS
Personal	SelfOther x GroupNo.	1.46	NS
Personal	PosNeg	14.25	< 0.0001
Personal	PosNeg x GroupNo.	3.35	0.04
Personal	SelfOther x PosNeg	5.58	0.02
Personal	SelfOther x PosNeg x GroupNo.	3.13	0.05
Situational	SelfOther	2.63	NS
Situational	SelfOther x GroupNo.	1.80	NS
Situational	PosNeg	3.36	NS
Situational	PosNeg x GroupNo.	3.67	0.03
Situational	SelfOther x PosNeg	2.09	NS
Situational	SelfOther x PosNeg x GroupNo.	5.24	0.008
External ¹	SelfOther	0.18	NS
External ¹	SelfOther x GroupNo.	0.93	NS
External ¹	PositiveNegative (PosNeg)	23.19	< 0.0001
External ¹	PosNeg x GroupNo.	10.37	< 0.0001
External ¹	SelfOther x PosNeg	9.14	0.004
External ¹	SelfOther x PosNeg x GroupNo.	10.15	< 0.0001

NS = not significant

¹ Because every answer was either internal or external, the total number of external attributions must always be: (nine minus total number of internal attributions). Therefore, the internal/external analyses are identical.

TABLE 7: Mean number of attributions and 95% confidence intervals for self-referent items

IPSAQ-M subscales	Group 1 (paranoid) N=20			Group 2 (depressed) N=21			Group 3 (non-patient) N=21		
	Lower Bound	Mean (SD)*	Upper Bound	Lower Bound	Mean (SD)*	Upper Bound	Lower Bound	Mean (SD)*	Upper Bound
Self-referent items									
Positive events									
Internal	3.23	4.45 (2.61)	5.67	2.82	3.86 (2.29)	4.90	5.27	5.95 (1.50)	6.63
Personal	1.23	2.05 (1.76)	2.87	1.26	2.29 (2.26)	3.32	0.54	1.10 (1.22)	1.65
Situational	1.60	2.50 (1.93)	3.40	1.80	2.86 (2.33)	3.92	1.31	1.95 (1.40)	2.59
External*	3.33	4.55 (2.61)	5.77	4.10	5.14 (2.29)	6.18	2.36	3.05 (1.50)	3.73
Negative events									
Internal	3.09	4.00 (1.95)	4.91	4.85	5.71 (1.90)	6.58	2.02	2.76 (1.64)	3.51
Personal	1.80	2.65 (1.81)	3.50	0.87	1.52 (1.44)	2.18	1.50	2.57 (2.38)	3.65
Situational	1.53	2.35 (1.76)	3.17	0.94	1.76 (1.79)	2.57	2.54	3.67 (2.48)	4.79
External*	4.09	5.00 (1.95)	5.91	2.42	3.29 (1.90)	4.15	5.49	6.24 (1.64)	6.98
Externalizing bias (EB)†		0.45 (3.03)			-1.86 (2.65)			3.19 (2.29)	
Personalizing bias (PB)†		0.52 (0.30)			0.48 (0.38)			0.40 (0.34)	

*SD = Standard Deviation; *External = Situational + Personal attributions; †A positive EB score indicates a strong self-serving bias; †A PB score of greater than 0.5 represents a greater tendency to use personal rather than situational attributions for negative events.

TABLE 8: Mean number of attributions and 95% confidence intervals for other-referent items

IPSAQ-M subscales	Group 1 (paranoid) N=20		Group 2 (depressed) N=21		Group 3 (non-patient) N=21	
	Lower Bound	Mean (SD)*	Lower Bound	Mean (SD)*	Lower Bound	Mean (SD)*
Other-referent items						
Positive events						
Internal	4.28	5.05 (1.64)	4.36	5.48 (2.46)	5.19	5.90 (1.58)
Personal	0.86	1.65 (1.69)	0.86	1.81 (2.21)	0.68	1.33 (1.43)
Situational	1.59	2.30 (1.53)	0.85	1.71 (1.90)	1.17	1.76 (1.30)
External*	3.18	3.95 (1.64)	2.40	3.52 (2.46)	2.38	3.10 (1.58)
Negative events						
Internal	2.67	3.80 (2.42)	2.50	3.52 (2.25)	2.40	3.48 (2.36)
Personal	1.73	2.50 (1.64)	2.00	2.95 (2.09)	1.73	2.92 (2.69)
Situational	1.74	2.70 (2.05)	1.57	2.52 (2.09)	1.44	2.57 (2.48)
External*	4.07	5.20 (2.42)	4.45	5.48 (2.25)	4.45	5.52 (2.36)
Externalizing bias (EB)†		1.25 (2.77)		1.95 (2.73)		2.43 (2.18)
Personalizing bias (PB)†		0.49 (0.28)		0.55 (0.32)		0.54 (0.40)

*SD = Standard Deviation; *External = Situational + Personal attributions; †A positive EB score indicates a strong self-serving bias; †A PB score of greater than 0.5 represents a greater tendency to use personal rather than situational attributions for negative events.

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Figure 3: For self-referent events, the mean number of internal, personal & situational attributions made for positive & negative events

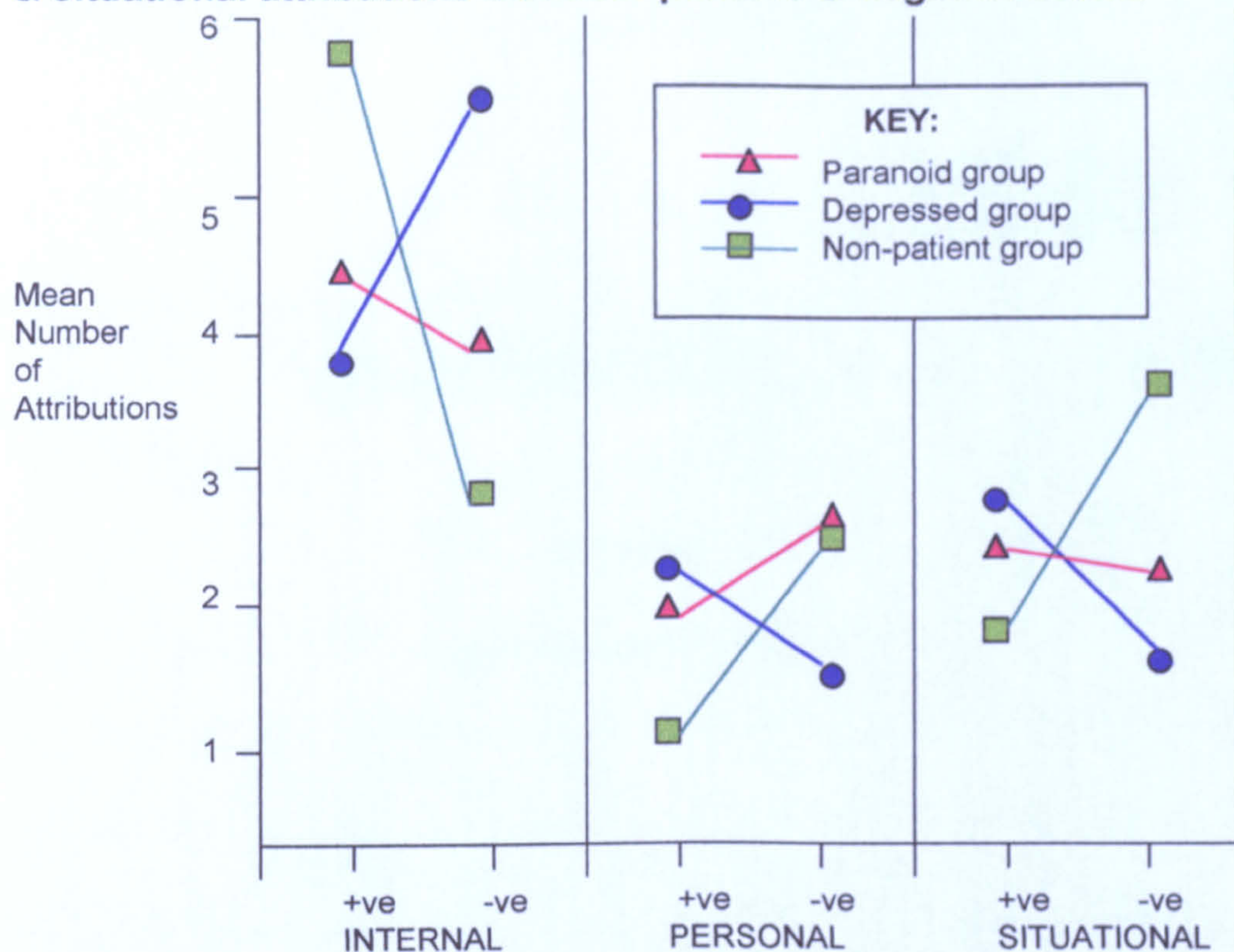


Figure 4: For other-referent events, the mean number of internal, personal & situational attributions made for positive & negative events

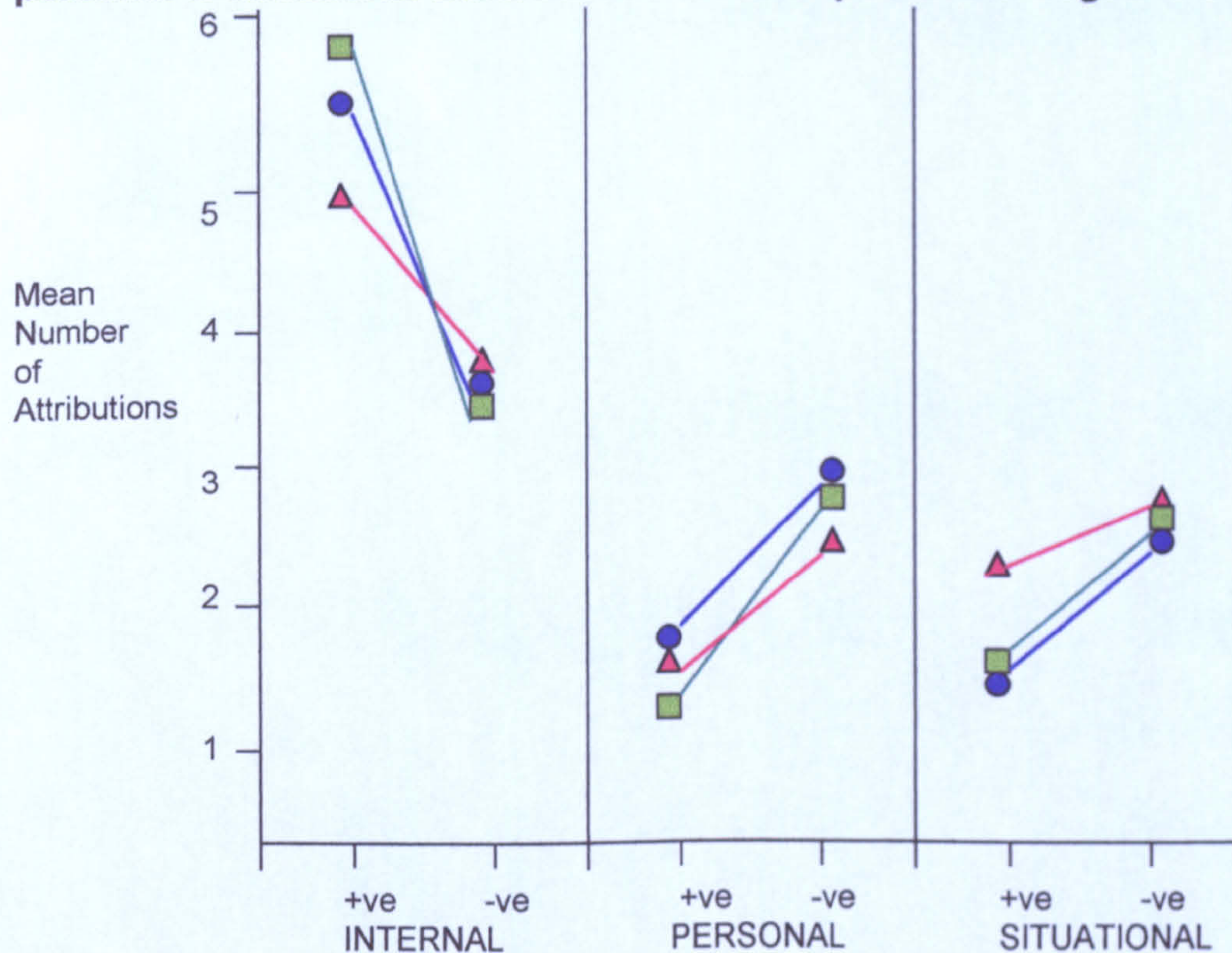


Figure 5: For self-referent events, the mean number of internal & external attributions made for positive & negative events

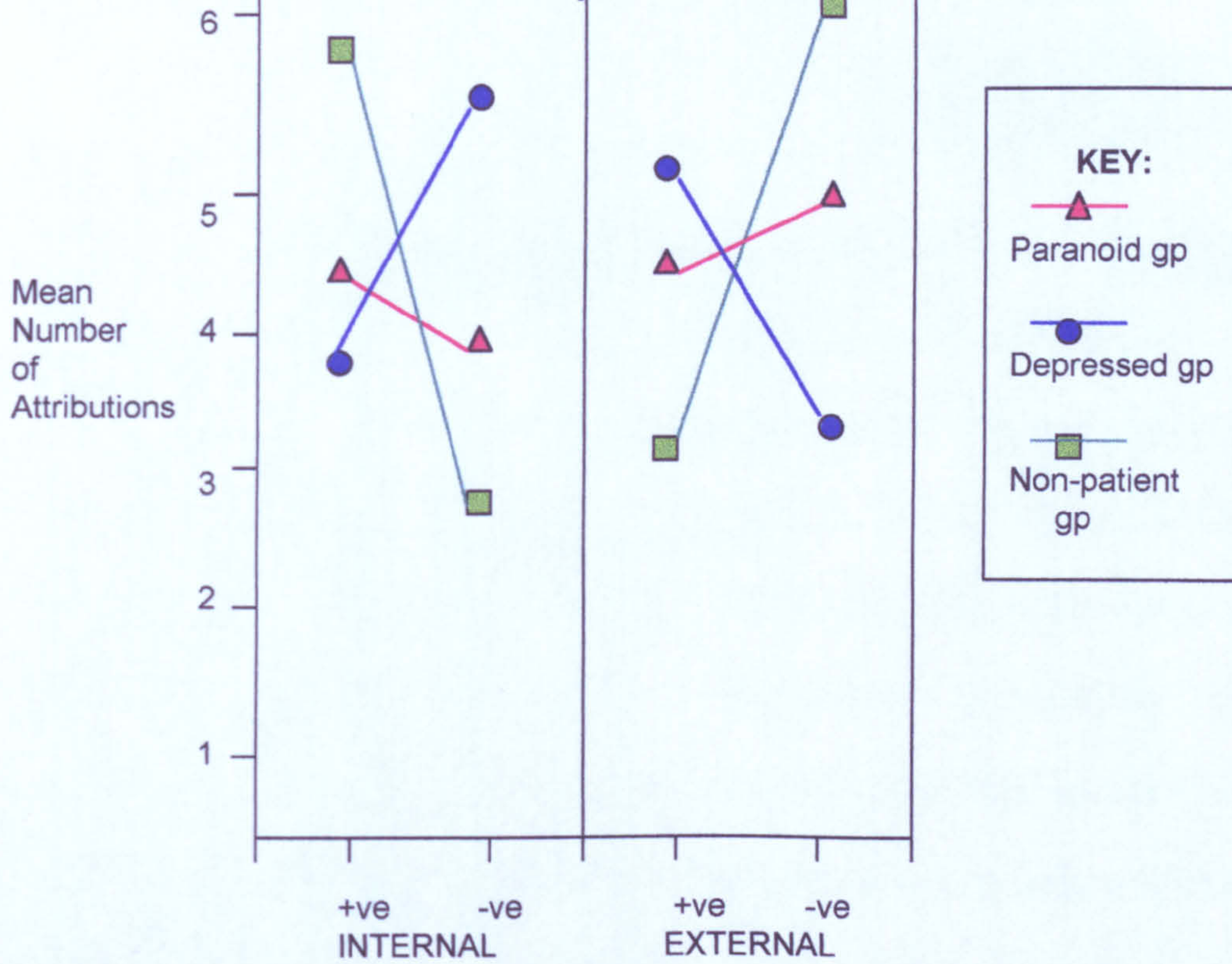
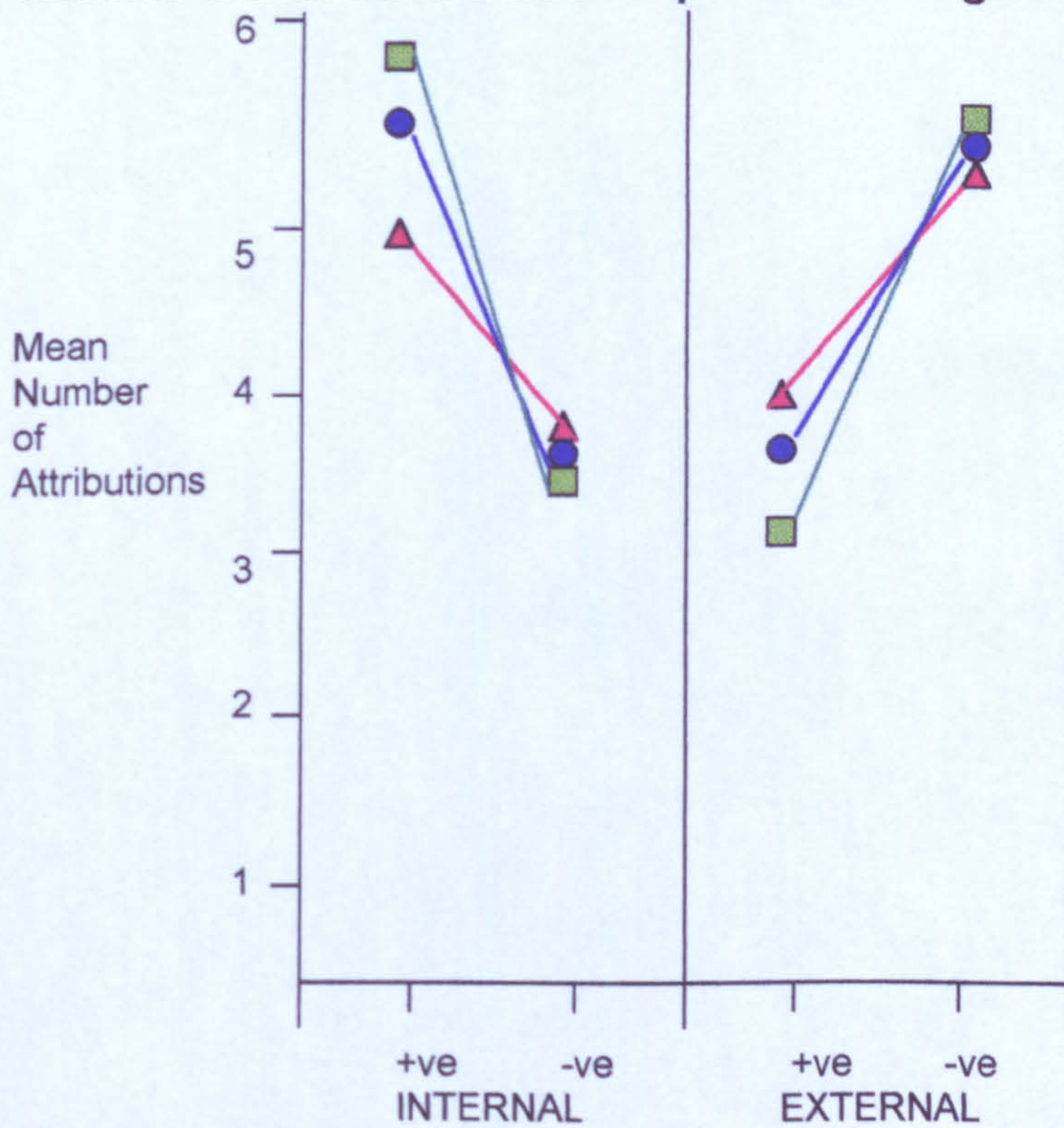


Figure 6: For other-referent events, the mean number of internal & external attributions made for positive & negative events



Hypothesis 1: *For items relating to themselves ("self-referent"), paranoid participants will have a greater tendency than non-patient participants to attribute the causes of positive events to internal causes.*

See Figure 3 & Table 7: This hypothesis was not supported and, in fact, the reverse was found, such that non-patient participants had a greater tendency than paranoid participants to attribute the causes of positive events to internal causes; although 95% confidence intervals, based on this sample, would predict some overlap between the two groups: (3.23, 5.67; mean 4.45) for the paranoid group; (5.27, 6.63; mean 5.95) for the non-patient group.

Hypothesis 2: *For items relating to themselves ("self-referent"), paranoid participants will have a greater tendency to attribute the causes of negative events to external-personal causes, compared with depressed and non-patient controls.*

See Figure 3 & Table 7: This hypothesis was only partially supported, as paranoid participants and non-patient participants had an almost equal tendency to attribute the causes of negative events to external-personal causes (95% confidence intervals of (1.80, 3.50) for paranoids, and (1.52, 3.65) for non-patients); although, both these groups had a greater tendency compared with depressed patients: 95% confidence interval (0.87, 2.18).

Hypothesis 3: *For items relating to themselves ("self-referent"), depressed participants, compared with paranoid and non-patient participants, will have a greater tendency to attribute the causes of positive events to external causes.*

See Figure 5 & Table 7: This hypothesis was supported; although 95% confidence intervals predicted the possibility of some overlap between

depressed (4.10, 6.18) and paranoid patients (3.33, 5.77). Depressed participants, compared to the other two groups, also had a greater tendency to attribute the causes of positive events to external-personal and external-situational causes, for self-referent items (see Figure 3).

Hypothesis 4: *For items relating to themselves (“self-referent”), depressed participants, compared with paranoid and non-patient participants, will have a greater tendency to attribute the causes of negative events to internal causes.*

See Figure 3 & Table 7: This hypothesis was supported, even taking into account 95% confidence intervals: depressed group (4.85, 6.58), paranoid group (3.09-4.91), non-patient group (2.02, 3.51).

Hypothesis 5: *For items relating to themselves (“self-referent”), non-patient participants will have a greater tendency to attribute the causes of positive events to internal causes, compared with depressed participants.*

See Figure 3 & Table 7: This hypothesis was supported, even taking into account 95% confidence intervals: non-patient group (5.27, 6.63), depressed group (2.82, 4.90). Furthermore, non-patient participants made more internal attributions for positive events compared with paranoid participants, with only a slight overlap in 95% confidence intervals between the two: (3.23, 5.67) for paranoids.

Hypothesis 6: *For items relating to themselves (“self-referent”), non-patient participants will have a greater tendency to attribute the causes of negative events to external-situational causes, compared with depressed and paranoid participants.*

See Figure 3 & Table 7: This hypothesis was supported. Taking into account 95% confidence intervals, this hypotheses was still supported for the depressed group ((2.54, 4.79) non-patients, (0.94, 2.57) depressives), although some overlap was predicted between the non-patient group and the paranoid group (1.53, 3.17).

Hypothesis 7: *For items relating to the perspective of another person ("other-referent"), it is expected that there will be no significant differences between the three groups (depressed, non-patient, and paranoid) in terms of their causal attributions for a) positive events, and b) negative events.*

From Figure 4 & 6, and Table 8, it can be seen that all three groups make similar causal attributions for both positive and negative events, even taking into account 95% confidence intervals across the three groups. Furthermore, the attributions of the paranoid and depressed groups are very similar to the causal attributions made by the non-patient group for both self-referent and other-referent items. The most significant differences in attributions occurred in the depressed group whose attributional biases for other-referent events, compared to self-referent events, were reversed in all cases. No such differences in attributional biases for other-referent, compared to self-referent, were found for the paranoid group: although, compared with self-referent negative events, paranoid patients made slightly more situational attributions and slightly less personal attributions for other-referent negative events.

Externalizing bias (EB) and Personalizing bias (PB) scores were calculated for both self-referent (see Table 7) and other-referent items (see Table 8): EB is calculated by subtracting the number of internal attributions for negative

events from the number of internal attributions for positive events; PB is calculated by dividing the number of personal attributions by the sum of both personal and situational attributions for negative events. One-way ANOVAs revealed no significant differences between the three groups for the PB scores (self- and other-referent) or for the other-referent EB scores. However, a one-way ANOVA conducted on self-referent EB scores revealed a significant difference among the groups $F(2, 59) = 18.80, p < .0001$. Post-hoc Scheffé tests revealed significant differences between all three groups: the non-patient group had a significantly higher EB score than the paranoid group ($p = .007$) and the depressed group ($p < .0001$); and the paranoid group had a significantly higher EB score than the depressed group ($p = 0.001$). Thus, for self-referent items, non-patients had the strongest self-serving bias, with paranoid patients exhibiting a slight self-serving bias, and depressed patients exhibiting a negative bias (a so-called "self-deprecating bias").

3.9 Exploratory Questions

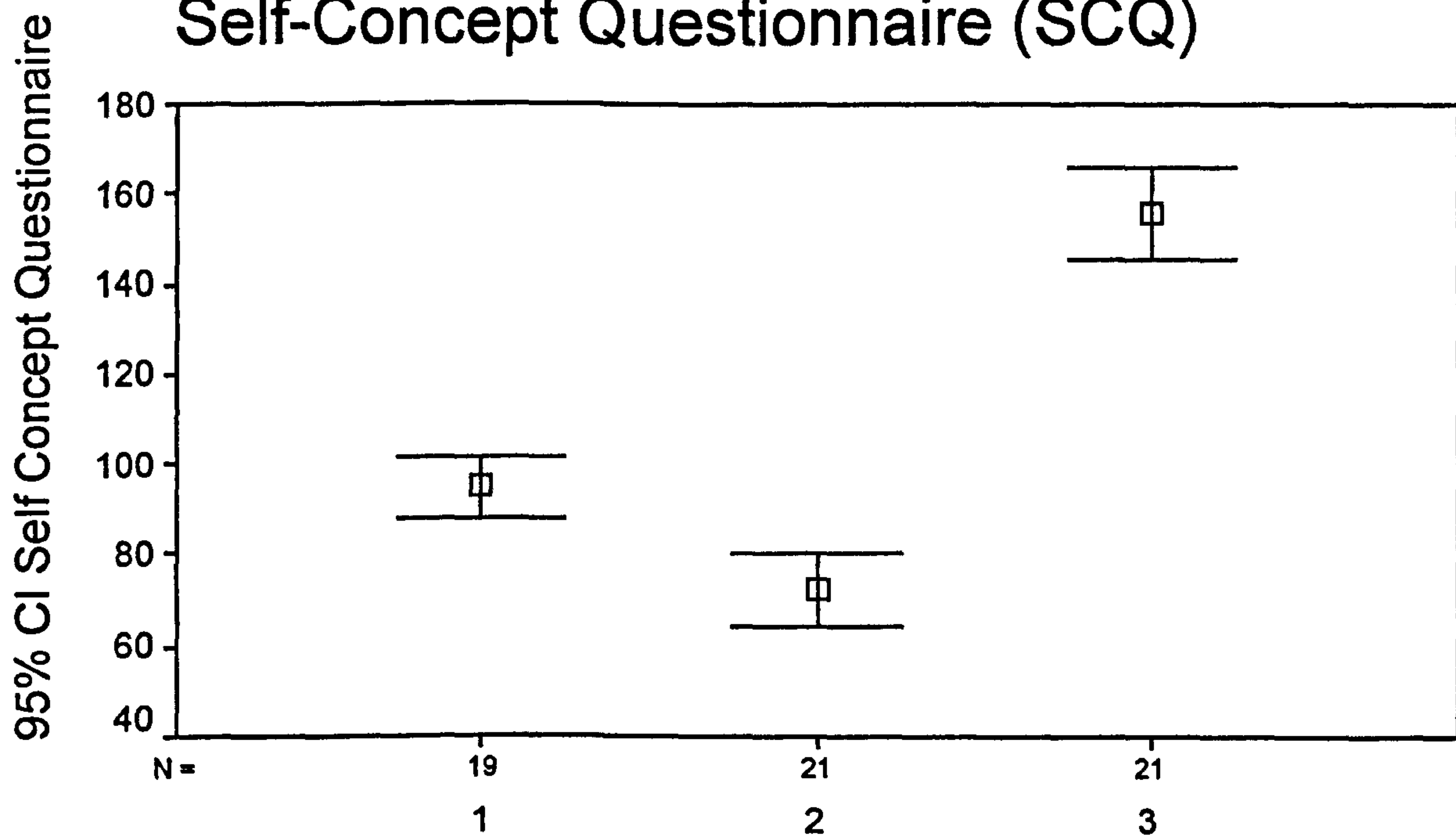
In addition to the hypotheses described above, the following two questions were also investigated:

Question 1: *What are the levels of self-esteem reported by paranoid participants, depressed and non-patient participants?*

A one-way ANOVA conducted on Self-Concept Questionnaire (SCQ) scores revealed a significant difference between the groups, $F(2, 59) = 44.51,$

$p < .0001$. Post-hoc Scheffé tests revealed significant differences between all three groups: non-patient participants reported significantly higher self-esteem than paranoid participants ($p < .0001$) and depressed participants ($p < .0001$); and paranoid participants reported significantly higher self-esteem than depressed participants ($p = 0.001$). 95% confidence intervals for the mean self-esteem score, based on this sample, are (87.85, 101.52) for paranoid participants, (64.20,80.56) for depressed participants, and (145.28,166.25) for non-patient participants. For the SCQ, both of the entire intervals for the depressed and paranoid groups fall within the clinical range; while the entire interval for the non-patient group falls within the non-clinical range for the SCQ. Figure 7 below shows these confidence intervals graphically:

Figure 7: 95% Confidence Intervals (CI) for Self-Concept Questionnaire (SCQ)



group number

1 = Paranoid Group; 2 = Depressed Group; 3 = Non-patient Group

Question 2: *Is there an association between self-esteem and depression scores in the three groups?*

Scatterplots indicated that it was appropriate to use Pearson Correlations to explore this question.

Table 9: Pearson Correlations for Beck Depression Inventory (BDI) associations with Self-Concept Questionnaire (SCQ) (2-tailed)

		SCQ respectively
Group 1 (paranoid)	BDI	-.62**
Group 2 (depressed)	BDI	-.51*
Group 3 (non-patient)	BDI	-.66**

*. Correlation is significant at the 0.05 level (2-tailed)

**. Correlation is significant at the 0.01 level (2-tailed)

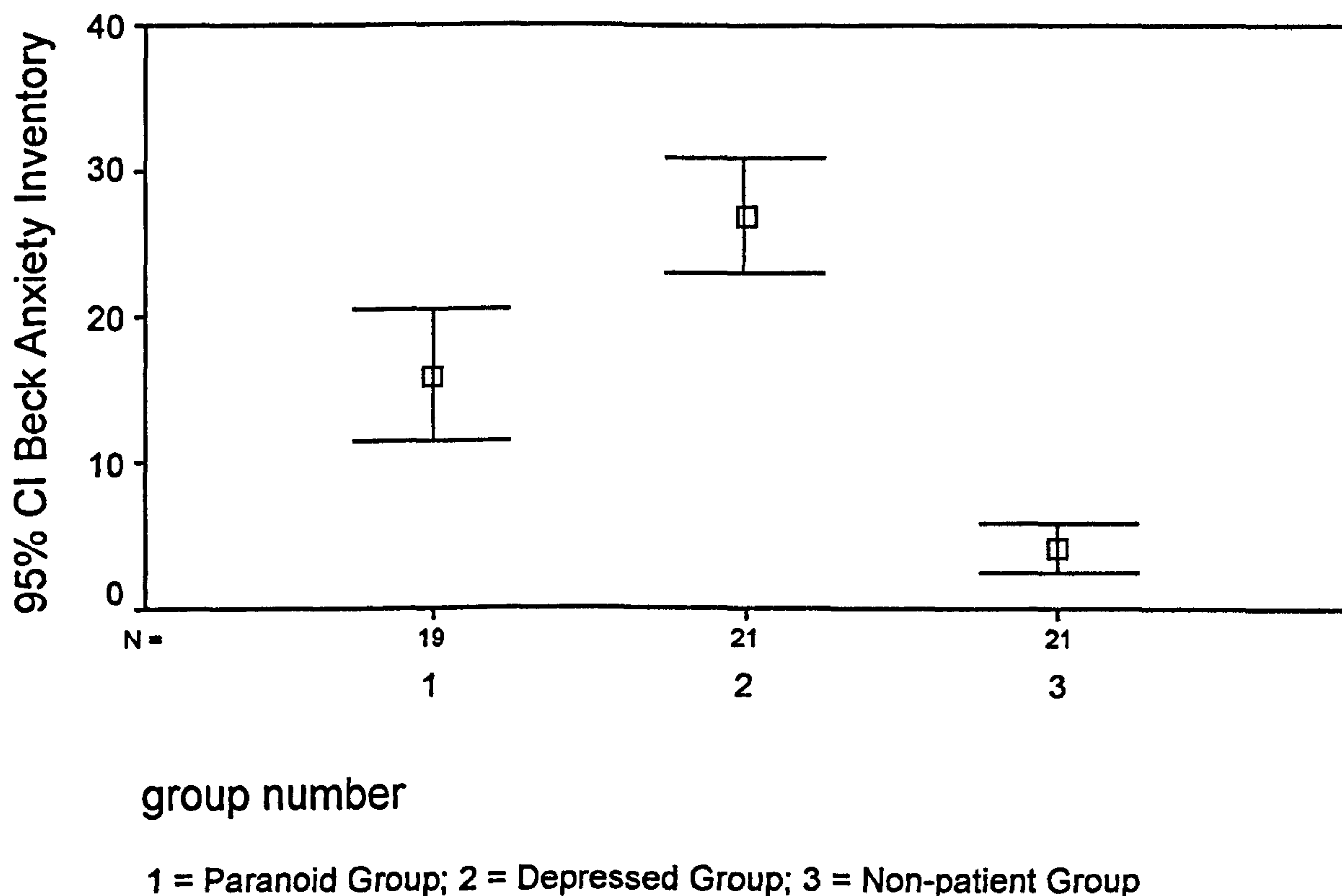
Table 9 shows that significant negative associations were found between self-esteem and depression in the three groups: such that, for each group, when depression scores increase, self-esteem scores increase.

3.10 Additional Noteworthy Findings

A one-way ANOVA conducted on BAI scores revealed a significant difference between the groups, $F(2, 58) = 47.12, p < .000$. Post-hoc Scheffé tests revealed significant differences between all three groups: the depressed group reported significantly higher anxiety than the paranoid group ($p = .002$) and the non-patient group ($p < .000$); and the paranoid group reported significantly higher anxiety than the non-patient group ($p < .000$). 95% confidence intervals for the mean self-esteem score, based on this sample, are (11.42, 20.58) for paranoid participants, (23.00, 30.71) for depressed participants, and (2.55, 5.83) for non-patient participants. For the BAI, the entire intervals for both the depressed and paranoid groups fall within the clinical range (moderate to

severe, and mild to moderate, respectively); while the entire interval for the non-patient group falls within the non-clinical range. Figure 8 below shows these confidence intervals graphically:

Figure 8: 95% Confidence Intervals (CI) for Beck Anxiety Inventory (BAI)



SECTION 4
DISCUSSION

4. DISCUSSION

4.1 Overview of Discussion

Firstly, the general findings of the study will be discussed, followed by findings relating to the research hypotheses. Then findings relating to the exploratory questions and anxiety levels will be discussed. Subsequently, methodological and theoretical limitations, and implications for psychological treatment of the current study are discussed, followed by suggestions for possible avenues for future research. Finally, the conclusions of this study are stated.

4.2 Summary of Research Findings

4.2.1 General Findings

Results indicate that the IPSAQ-M used in the main study had reasonable test-retest reliability, and acceptable levels of internal reliability for all 12 subscales. However, reliability may have been improved if less reliable items from the pilot questionnaire had been dropped and replaced with other items from the original IPSAQ: for example, items could have been replaced where below 60% of participants achieved agreement between their first questionnaire attributions and their retest questionnaire attributions, and/or items could have been deleted where the result was an improved alpha value. However, due to limited time and resources, it was not possible to implement another pilot of a second modified questionnaire before commencing the main study.

Statistical analyses confirmed that the three groups were well matched in terms of age, premorbid intelligence and gender: thus controlling for these variables. Furthermore, diagnostic data reported in the results confirmed that all participants fulfilled inclusion criteria for their allocated group, and exclusion criteria were observed.

With regard to sociodemographic data, it was not surprising that paranoid participants differed from non-patient participants in terms of marital status, number of children, household composition, and highest educational qualification achieved. These differences may be partly the consequences of paranoid people suffering from chronic mental health problems. Surveys, for example, suggest that up to 60% of patients with schizophrenic syndromes, and other chronic psychotic syndromes, may show signs of moderate to severe social disability, including an inability to function at work or in relationships (Fowler et al, 1995). Consequently, people with psychosis may be less likely to get married, have children, live with their partner or family, or undertake a career which involves further professional qualifications.

4.2.2 Findings for Research Hypotheses

I: Findings for Self-Referent Hypotheses

The findings of Kinderman & Bentall (1997a) were partially replicated in the current study: such that, with regard to self-referent items on the IPSAQ, the following hypotheses were supported:

1. (Hypothesis 2) Paranoid participants, compared with depressed patients had a greater tendency to attribute the causes of negative events to external-personal causes. However, this tendency was almost equalled by non-patient participants. With regard to a personalizing bias, the paranoid participants only had a slightly greater tendency than depressed and non-patients to use personal rather than situational attributions for negative events, and there were no significant differences between the three groups. Thus, in this study, the paranoid participants were not more likely to locate the blame in other individuals when things go wrong, compared to controls.
2. (Hypotheses 3 & 4) Depressed participants had a greater tendency to attribute the causes of positive events to external causes, and also had a greater tendency to attribute the causes of negative events to internal causes, than either paranoid or non-patient participants. This is consistent with previous studies of causal attributions in depression (e.g. Brewin, 1988; Robins & Hayes, 1995).
3. (Hypothesis 5) Non-patient participants, compared with depressed participants, had a greater tendency to attribute the causes of positive events to internal causes. This finding supports Kinderman & Bentall's view of a robust "self-serving" bias in non-patient participants. Externalizing bias (EB) scores calculated in this study provided further support for a strong self-serving bias for non-patients. Interestingly, the non-patient group had a significantly higher EB score than the paranoid group who only exhibited a slight self-serving bias. This finding is the reverse of that

expected and fails to support previous findings of an exaggerated “self-serving” bias, in paranoid patients compared to non-patients. Three previous studies mentioned in the Introduction (Lyon et al, 1994; Fear et al, 1996; Sharp et al, 1997) also failed to find an exaggerated self-serving bias in paranoid patients: thus, casting doubt on the reliability of Kinderman & Bentall’s (1997a) findings.

4. (Hypothesis 6) Non-patients, compared with depressed and paranoid participants, had a greater tendency to attribute the causes of negative events to external-situational causes. This provides support for Kinderman & Bentall’s (1997a) view that non-patients are more likely to make attributions which neither implicate themselves or others, compared with the two patient groups.

II: Findings for Other-Referent Hypotheses

For other-referent events, the predictions of Hypothesis 7 were all supported: paranoid, depressed and non-patient participants made similar causal attributions for both positive and negative events, even taking into account 95% confidence intervals for the three groups. In other words, the differences, in causal attributions between the three groups, found for self-referent events (described above) were not found for other-referent events. Furthermore, the attributions of the paranoid and depressed groups, for other-referent events, were very similar to the causal attributions made by the non-patient group, for both self- and other-referent events. This provides support for previous findings in which abnormal causal attributional biases were only found for information involving the self, and not for information involving other people

(e.g. Butler & Mathews, 1983; Cooper, 1997). The most significant differences in attributions were found in the depressed group whose attributional biases for other-referent, compared to self-referent, were reversed in all cases. No such differences in attributional biases for other-referent, compared to self-referent, were found for the paranoid group: although, compared with self-referent negative events, paranoid patients made slightly more situational attributions and slightly less personal attributions for other-referent negative events.

Thus, this study found that depressed patients, like anxious patients and people with eating disorders, can make inferences similar to non-patients for events happening to others. The fact that depressed patients exhibited an abnormal attributional style for self-referent events but not other-referent events, suggests that self-referent schemata were not activated in relation to other-referent information, as proposed by Fenigstein & Vanable (1992). These findings have implications for the treatment of depression which will be discussed later.

However, one cannot conclude from this study that people with persecutory delusions are able to make "non-paranoid" inferences for events happening to others, or that they are unable to take the perspective of another person because: firstly, although there was evidence (for self-referent events) of a slight personalizing bias in paranoid participants, this was not significantly different from that found in the other two groups, and, secondly, the paranoid participants in this study did not exhibit a significantly different personalizing

bias between the self-referent events and the other-referent. Therefore, no conclusions can be drawn regarding the specificity of attributional biases for this client group.

4.2.3 Findings for Exploratory Questions

In addition to the main hypotheses, two exploratory questions were investigated. It was found that all three groups reported significantly different levels of self-esteem: with non-patients reporting the highest self-esteem (within the non-clinical range); paranoid patients reporting much lower self-esteem (within the clinical range); and depressed patients reporting the lowest self-esteem (also within the clinical range). This supports recent findings by Freeman et al (1998) who found low self-esteem in over two-thirds of participants with persecutory delusions, indicating that such delusions do not maintain normal self-esteem, as Bentall and colleagues claimed (Bentall, 1994). Such findings cast doubt on the hypothesis that persecutory delusions act as a defence against low self-esteem (Winters & Neale, 1983; Bentall et al, 1994).

Furthermore, in this study, significant negative correlations were found between self-esteem and depression in the three groups. This provides further support for the view of Freeman et al which proposes that self-esteem is closely related to depression in people with persecutory delusions, as it is in the wider population: thus favouring a "normal emotional processes" account, as opposed to a defence account, of persecutory delusions.

4.2.4 Additional Findings

In addition, significant differences for reported anxiety levels were found between all three groups, with the depressed group reporting the most anxiety, within the clinical range; paranoid patients reporting less anxiety but still within the clinical range; and non-patients reporting no or minimal anxiety, within the non-clinical range. It is not known whether anxiety levels could have influenced the results of this study in any way: for example, in terms of links between attributional style and anxiety levels. This may warrant further investigation.

4.3 Methodological Limitations

One needs to be cautious about the results of this study for a number of reasons, as follows:

As the present study introduced the self- versus other-referent dimension, only a proportion of the original IPSAQ items were used (18/32 items) in the modified IPSAQ: thus data analysis is based on only 56% of the items used in Kinderman & Bentall's (1997a) study. However, it was felt to be inappropriate to expect participants to complete a questionnaire with 64 items in it, in addition to sociodemographic and diagnostic measures.

This research may have suffered from a "selection bias": such that it is possible that only certain paranoid individuals agreed to participate or were put forward by staff. It is possible, for example, that the deluded participants in this

study were less paranoid than those in previous studies. It may have been informative to investigate the possible effects of the process of participant recruitment. It was beyond the bounds of this study, for example, to ascertain information about individuals who declined to participate when asked by mental health professionals, or who were not put forward by staff due concerns about client safety or the safety of others.

Use of a valid and reliable measure of paranoid delusions may have proved useful in examining the degree of paranoia in each group. Such a tool was not used in this study due to lack of availability, and concern that some participants may have become resistant to continuing the study.

All the paranoid participants in this study were on maintenance anti-psychotic medication: it was not possible to determine the extent to which the results may have been affected by medication. It may be, for example, that an abnormal attributional style was not found in this study because the deluded participants were not experiencing florid psychosis at the time of testing. Krstev, Jackson & Maude (1999) suggest the need for longitudinal research to ascertain whether attributional style is a stable characteristic in psychosis, or whether it fluctuates between periods of remission and active psychosis.

If the deluded participants in this study were thought to be less paranoid than in previous studies, because of a selection bias and/or because of the effects of anti-psychotic medication and/or other reasons, then one could suggest that

the defensive function of their persecutory delusions was reduced: this may explain why they reported low self-esteem and mild to moderate depression.

Furthermore, the fact that paranoid participants only exhibited a slight “self-serving” bias for self-referent events in this study may have been influenced by the high depression scores for this group: such that 30% of the paranoid group fulfilled the criteria for major depressive episode, and the entire confidence intervals (95%) for this group fell within the mild to moderate clinical range for the BDI. Thus, it is possible that their attributional styles were partially effected by their levels of depression. Indeed, Kinderman & Bentall (1997a) reported that BDI scores were significant predictors of the number of internal attributions, and EB scores, for negative events.

An alternative explanation may arise from the work of Chadwick & Trower (1996): they have distinguished between two types of paranoia based on recent empirical work and extensive clinical experience: 1) **Persecution (“poor me”)** paranoia refers to paranoid individuals who tend to blame others, to see others as bad, and who tend to see themselves as victims; 2) **Punishment (“bad me”)** paranoia refers to paranoid individuals who tend to blame themselves, see themselves as bad, and view others as justifiably punishing them: such individuals are said to have poor self-esteem, which is inextricably linked to the paranoia. Chadwick & Trower suggest that the exaggerated self-serving bias found in persecution paranoia does not operate in punishment paranoia. Thus, the results found in this study may be

confounded by the possibility that some, if not all, of the paranoid participants were experiencing punishment paranoia, rather than persecution paranoia. Certainly, there was clear evidence that all the paranoid participants reported low self-esteem, within the clinical range. Thus, in future studies, it may be important to distinguish between the two paranoid types: although, at present, there is no standardised assessment tool to measure this.

A number of other factors which may have influenced the results in this study were not considered, such as: the length of use, and level of medication used; age of onset, chronicity and duration of mental health problems; the level of conviction of delusional beliefs; and level of executive and memory functioning. These and other variables may be important topics of investigation in future studies.

4.4 Theoretical Implications

In this section, some theoretical implications of this study are discussed:

The fact that normal or high self-esteem was not found in the paranoid participants in this study does not necessarily imply that self-esteem does not influence persecutory delusions. Freeman et al (1998) have suggested that there may be alternative roles for self-esteem in delusion formation and maintenance: such that, low self-esteem may give deluded individuals a feeling of exclusion from the social world and a sense of being potential targets of others; or may lead them to believe that others see them as inferior and unfairly persecute them.

Furthermore, in their paper, Freeman et al (1998) have made an assumption that Bentall et al's (1994) self-discrepancies are concerned with a similar construct to the term "self-esteem". It could be argued, however, that the measures used by Bentall and colleagues are measuring something different to the SCQ: for example, Kinderman & Bentall (1996a) used The Personal Qualities Questionnaire, derived from Higgin's (1987) work, to measure self-discrepancies in paranoid and depressed patients, and non-patients.

With regard to a Theory of Mind deficit in people with persecutory delusions, no conclusions can be drawn from this study, as paranoid participants did not, compared to non-patients, exhibit a personalizing bias for negative self-referent events, or exhibit an exaggerated self-serving bias for positive self-referent events, as previously found, nor did they exhibit such biases for other-referent events. However, if the paranoid group had exhibited an abnormal attributional style for both self-referent and other-referent events, one possible explanation could have been that these individuals had a ToM deficit which meant that they were unable to take the perspective of another person for other-referent events. More research is needed to explore this further.

4.5 Implications for Psychological Treatment

In this study, it was clear that the depressed group exhibited an attributional bias in relation to self-referent events but not events relating to another (e.g. Cooper, 1997). This result has implications for the refinement of Cognitive Therapy for depressed patients: for example, when a depressed patient is

describing a negative event that has occurred to him/her, s/he could be asked to imagine the same event happening to another person, and to consider how that other person might explain the event. By asking the patient to consider the event from another person's perspective, it may be possible to elicit less biased causal explanations for the event. This technique could then be applied to other situations in the patient's life.

However, it is not clear from this study whether, for people with persecutory delusions, a similar distinction between attributional biases for self-referent events and for other-referent events would be found: because, in this study, paranoid participants, compared with non-patients, did not exhibit a personalizing bias for negative self-referent or other-referent events, and did not exhibit an exaggerated self-serving bias for positive self-referent or other-referent events. Thus, further research is needed to investigate this, taking into consideration some of the limitations of this study, before implications for Cognitive Therapy can be considered.

Paranoid participants reported low self-esteem, mild to moderate depression, and mild to moderate anxiety levels. These results have implications for psychological treatment: such that self-esteem, depression and anxiety should be targeted in their own right when considering a cognitive-behavioural approach for people with persecutory delusions.

Furthermore, Birchwood and Iqbal (1998) have argued that depression and loss of self-esteem in people with psychosis may be viewed as a reaction to

the experience of psychosis as an uncontrollable traumatic life event. Clearly, sociodemographic data in this study indicated differences between the paranoid participants and non-patients, on factors such as marital and professional status. Thus, it may prove useful to explore with individuals the impact of their experience of psychosis. Clinical experience indicates that people with distressing psychotic symptoms often welcome the opportunity to discuss their experiences in a supportive environment.

4.6 Future Research

With regard to replicating this study, there are a number of suggestions for improvements in the methodology, following the discussion in Section 4.3 above. These include: use of all the items of the original IPSAQ for both self- and other-referent events, with appropriate reliability and validity analysis of the modified questionnaire; exploration of the process of recruitment; use of a tool to examine the degree of paranoia in each group; exploration of the effects of maintenance anti-psychotic medication on attributional style; and distinguishing between persecution paranoia and punishment paranoia. Furthermore, a number of other improvements could be considered for future research in this area:

The experimental group were selected for the study on the basis of the presence or absence of a particular symptom, persecutory delusions. Given more time, it may have been interesting to explore fluctuations in different dimensions such as levels of conviction in the reality of delusional beliefs and levels of distress. Furthermore, Sharp et al (1997) suggest recruiting patients

with a diagnosis of delusional disorder, rather than schizophrenia, for the study of delusions, as they represent the “purest” available sample: such that, primarily delusional phenomena are experienced in the gross absence of other symptomatology.

The IPSAQ is limited in that it is solely concerned with the distinction between three loci of causal attribution. Bentall & Kinderman (1998) have acknowledged this and they support the investigation of complementary aspects of causal attribution, such as the degree to which individuals believe they have control over a situation. Furthermore, it is possible that different cognitive processes, such as data gathering biases and attributional biases, may co-occur and may even interact: this may warrant further exploration in future studies.

The model outlined by Bentall and his colleagues is essentially descriptive, failing to explain the origins of cognitive abnormalities in paranoid patients. Similarly, the current study shares this limited focus on attributional processes. Bentall & Kinderman (1998) have speculated on possible aetiologies, including: cognitive styles transmitted between generations, and prolonged exposure to highly critical environments.

Furthermore, this study has a cross-sectional, between groups design, and demonstrates associations rather than cause. According to Garety & Hemsley (1994), delusions are unlikely to share one common cause: they have proposed a multi-factorial model in which a number of factors are likely to

contribute to their formation and maintenance, including: past experience, affect, self-esteem, motivation, and/or biases in perception and judgement. Exploration of the relationships between these factors was beyond the scope of this dissertation but could prove informative in predicting individual vulnerabilities to psychotic symptoms.

In addition, Garety & Freeman (1999) suggest that studies focusing on patients with early psychosis, patients in remission or non-clinical participants with high delusional ideation, or studies which use longitudinal methodology, could prove valuable in investigating cognitive processes over time. Halligan & Marshall (1996), for example, found that single case studies using longitudinal methodology produced interesting findings. It is also argued that future theoretical development should focus on both single symptoms and clusters of symptoms (Garety & Freeman, 1999).

4.7 Conclusions

The main conclusions from this study are as follows:

1. The test-retest reliability and internal reliability of the IPSAQ-M were found to be acceptable. In addition, the acceptability and face validity of this revised questionnaire were supported.
2. The findings of Kinderman & Bentall (1997a) were partially replicated. Consistent with previous findings, paranoid participants, compared with depressed participants, had a greater tendency to make external-personal attributions for negative events. However, paranoid participants, compared with non-patients, did not have a greater tendency to make internal

attributions for positive events (as found in other studies e.g. Sharp et al, 1997); and did not have a greater tendency to make external-personal attributions for negative events. In support of previous findings, depressed participants, compared with paranoid or non-patient participants, had a greater tendency to make external attributions for positive events, and to make internal attributions for negative events. Furthermore, non-patient participants, compared with depressed participants, had a greater tendency make internal attributions for positive events (exhibiting a strong "self-serving" bias); and, compared with both depressed and paranoid participants, had a greater tendency to make external-situational attributions for negative events.

3. For other-referent events, the predictions were supported: such that, for both positive and negative events, the causal attributions of paranoid and depressed participants were found to be similar to the causal attributions of the non-patients. However, because paranoid participants, compared with non-patients, in this study did not exhibit a personalizing bias for negative self-referent or other-referent events, and did not exhibit an exaggerated self-serving bias for positive self-referent or other-referent events, it was not possible to conclude that abnormal attributional biases were mainly exhibited in relation to self-referent events but not events relating to another person. However, it was concluded that depressed participants, like anxious and eating disorder patients in previous studies, mainly exhibited attributional biases in relation to self-referent events but not events relating to another person: with implications for the refinement of Cognitive Therapy for depressed clients.

4. With regard to self-esteem, all three groups were significantly different, with both depressed and paranoid participants reporting low self-esteem within the clinical range. This supports recent findings and casts doubt on the hypothesis that persecutory delusions act as a defence against low self-esteem. Furthermore, significant negative correlations between self-esteem and depression in the three groups provide support for a “normal emotional processes” account, as opposed to a defence account, of persecutory delusions.

Finally, some interesting findings have emerged from this study. Such research highlights the need for further theoretical and empirical development in the area of psychotic symptoms: a multidimensional approach is likely to be the best way forward.

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