



A cognitive model of persecutory delusions

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A multifactorial model of the formation and maintenance of persecutory delusions is presented. Persecutory delusions are conceptualized as threat beliefs. The beliefs are hypothesized to arise from a search for meaning for internal or external experiences that are unusual, anomalous, or emotionally significant for the individual. The persecutory explanations formed reflect an interaction between psychotic processes, pre-existing beliefs and personality (particularly emotion), and the environment. It is proposed that the delusions are maintained by processes that lead to the receipt of confirmatory evidence and processes that prevent the processing of disconfirmatory evidence. Novel features of the model include the (non-defended) direct roles given to emotion in delusion formation, the detailed consideration of both the content and form of delusions, and the hypotheses concerning the associated emotional distress. The clinical and research implications of the model are outlined.

Garety, Kuipers, Fowler, Freeman, and Bebbington (2001) have proposed a new model of the positive symptoms of psychosis. In this paper the model is applied to one specific symptom: persecutory delusions. Given the complex nature of psychosis, such specification may be clinically and theoretically useful. The positive symptoms of psychosis frequently co-occur, but symptom-specific models can facilitate theory and treatment development, as has been found for anxiety disorders (see Clark & Fairburn, 1997). The model was developed with the aim of being helpful for clinicians using psychological approaches for the problems of individuals with persecutory delusions.

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The model is complex, despite the focus on a single symptom. This is because multiple factors are incorporated. However, we argue that only a multifactorial understanding of symptom development and maintenance adequately reflects the phenomenon (Garety & Freeman, 1999; Garety & Hemsley, 1994). In short, the causes of delusions, even of the same content-type, are likely to vary between individuals. Why then focus upon persecutory delusions? There are two main reasons. The first is that persecutory delusions are likely to have common maintaining factors. This is because they have a common theme of the ‘anticipation of danger’: they are threat beliefs. Similarly, the psychological conceptualization of anxiety disorders is that they are threat beliefs. Therefore, many of the processes implicated in the maintenance of anxiety disorders (Clark, 1999) should be implicated in the maintenance of persecutory delusions (Freeman & Garety, 1999, 2002). The second reason for focusing on persecutory delusions is because of their clinical relevance. They are one of the most frequently occurring delusions (Cutting, 1997) and symptoms of psychosis (World Health Organization, 1973). They are also associated with distress—more so, for example, than grandiose delusions. Finally, possession of a persecutory belief often has clear ramifications for the individual concerned. For example, Wessely *et al.* (1993) report that persecutory beliefs are the most likely type of delusion to be acted upon, and Castle, Phelan, Wessely, and Murray (1994) found that the presence of a persecutory delusion is a predictor of admission to hospital.

The discussion will concern delusions associated with diagnoses of non-affective functional psychosis since these are the disorders in which systematic research has occurred, but the model will have relevance for the understanding of delusions in other disorders. The model builds upon the work of other authors, notably Maher, Birchwood, Chadwick, and Bentall, and the research team’s own clinical and theoretical studies. The differences from the more general framework of Garety *et al.* (2001) are those of emphasis. The model of persecutory delusions has greater emphasis on processes that are typically associated with anxiety. Maintenance factors are grouped differently. The hypotheses concern both delusional conviction and accompanying distress (delusional distress, anxiety, and depression). Aspects of the content of persecutory beliefs are incorporated.

When the model is compared with that proposed by Bentall and colleagues (Bentall, 1994; Bentall, Kinderman, & Kaney, 1994) the differences are greater. In essence, these researchers suggest that persecutory delusions reflect an attributional defence against low self-esteem thoughts reaching consciousness. By blaming others for negative events, rather than the self or the situation, it is argued that negative thoughts about the self are prevented from reaching awareness. This is summarized by Bentall and Kaney (1996):

Building on previous accounts that implicate defences against self-esteem (Colby *et al.*, 1979; Zigler & Glick, 1988), we have argued that paranoid patients have latent negative self-representations or schemata similar to the more accessible negative self-representations observed in depressed patients (Bentall *et al.*, 1994). When these negative self-representations are primed by threatening events, leading to discrepancies between the self-representations and self-ideals, external (other-blaming) attributions for the threatening events are elicited. These attributions are self-protective in the sense that they reduce the patient’s awareness of discrepancies between the self and self-ideals, but carry the penalty of activating schemata that represent threats from others.

The degree to which evidence has been found to support the hypothesized discrepancy between implicit and explicit self-concepts in individuals with persecutory delusions is a topic of debate. In a number of studies Bentall and colleagues have sought evidence of such discrepancy (Bentall & Kaney, 1996; Kinderman, 1994; Lyon, Kaney, & Bentall, 1994). They conclude that: 'The hypothesis that deluded patients have an implicit, but explicitly denied, negative self-concept has been more difficult to test but has been supported by a number of studies' (Bentall & Kinderman, 1998). These researchers also interpret the evidence from their attributional studies as supportive of such a discrepancy (Bentall, 1994; Bentall *et al.*, 1994; Bentall & Kinderman, 1999). However in a recent review Garety and Freeman (1999) suggest that the defence hypothesis may only apply to a minority of individuals with persecutory delusions. They argue that there is evidence of an association of persecutory delusions with an externalizing attributional bias, but that the evidence is much weaker for the existence of a discrepancy between implicit and explicit self-schemas. Evidence of implicit and explicit self-concept discrepancy is not compelling when all the relevant studies are considered and the value of the various experimental methodologies scrutinized. The attributional bias may not serve the function of preventing low self-esteem thoughts from reaching consciousness.

Consistent with the view that persecutory delusions are not a defence, there is evidence that depression does not increase, or self-esteem lower, when persecutory delusions improve over time or with a psychological intervention (Chadwick & Lowe, 1994; Freeman *et al.*, 1998). Moreover, Bowins and Shugar (1998) report that delusions are generally rated as self-diminishing. They found that delusions of persecution and reference are the most self-diminishing type of delusion. In their study there was consistency between self-esteem and the content of delusions: the lower the self-esteem, the more self-diminishing the delusion. Therefore, the new model incorporates the attributional bias element of Bentall *et al.*'s theory, but it is argued that persecutory delusions are a direct reflection of the emotions of the individual and not a defence. That is, the delusions are consistent with existing ideas about the self, others, and the world.

The model

The model is summarized in Figs 1 and 2. The lines represent major links, and are not exhaustive.

The formation of the delusion

Underlying the model is a stress-vulnerability framework: the emergence of symptoms is assumed to depend upon an interaction between vulnerability (from genetic, biological, psychological, and social factors) and stress (which may also be biological, psychological, or social). Therefore, the formation of the delusion will begin with a precipitator, such as a life-event or other stressful occurrence or drug misuse. Arousal will be caused, and this is likely to be exacerbated by disturbances in sleep. Furthermore, this may often occur against the backdrop of long-term anxiety and depression (see below). For individuals with a vulnerability to psychosis, the arousal will initiate inner-outer confusion (Fowler, 2000), causing anomalous experiences (e.g. thoughts being experienced as voices, actions experienced as unintended, or more

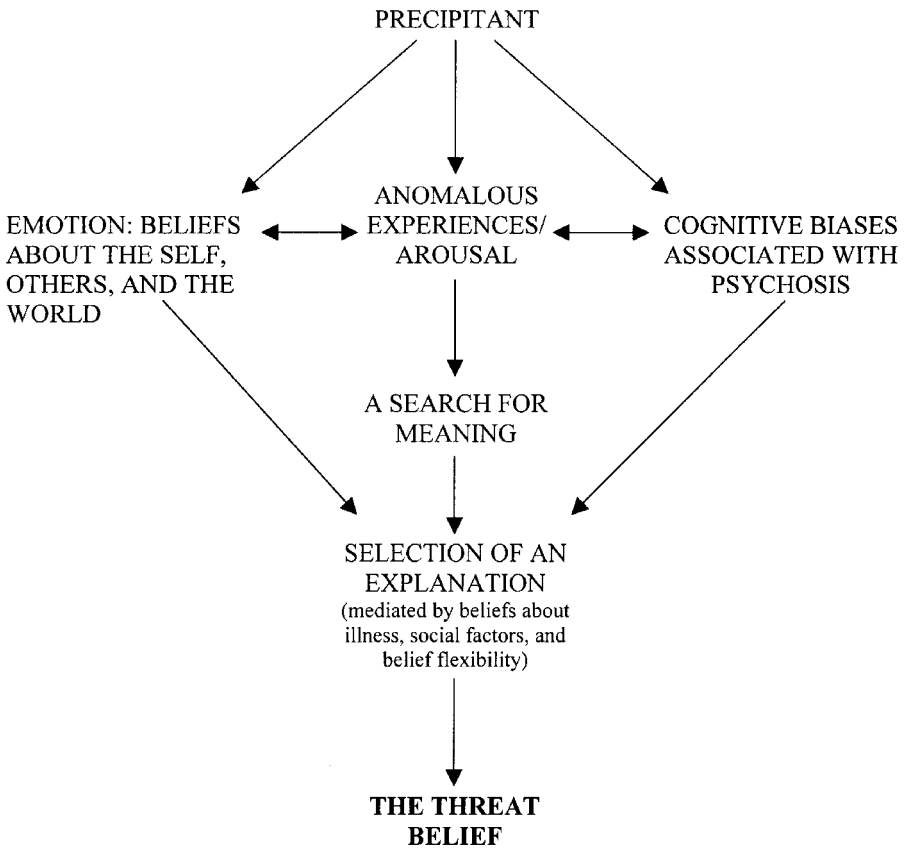


Figure 1. Summary of the formation of a persecutory delusion.

subtle cognitive experiences such as perceptual anomalies), which will in turn drive a search for meaning (Maher, 1988). The inner-outer confusion and the anomalous experiences may result from the types of psychological dysfunction described by Frith (1992) and Hemsley (1987). There is evidence of subtle anomalous perceptual experiences in individuals with schizophrenia (Bunney *et al.*, 1999; Ebel Gross, Klosterkötter, & Huber, 1989; Freedman & Chapman, 1973; McGhie & Chapman, 1961) and of individuals with delusions reporting that their beliefs were caused by an unusual internal state such as the experience of hallucinations (Garety & Hemsley, 1994). The generation of anomalous experiences by the precipitating event may occur via three routes (indicated by the three arrows from the precipitant in Figure 1): the precipitant may trigger anomalies directly; emotional disturbance may be triggered leading to anomalies; or cognitive biases associated with psychosis may be triggered leading to anomalies. The heightened state of the individual may lead to external events that are unusual, ambiguous, negative, or neutral (though often with social significance), also becoming incorporated into the search for meaning. In a smaller proportion of cases (e.g. often in delusional disorder), the precipitating event itself will lead directly to a search for meaning (i.e. there are no internal anomalous experiences). The person will be searching for an explanation of the triggering event or of recent events related to the

schema activated by the triggering event. In sum, individuals will be searching for explanations of internal anomalous experiences, or recent external events, or arousal.

In the search for meaning, pre-existing beliefs about the self, others, and the world are drawn upon. A persecutory belief is likely to be formed if individuals already believe that they are vulnerable, 'a soft-target' (Freeman *et al*, 1998), or consider that they deserve to be harmed because of their own previous behaviour (Trower & Chadwick, 1995), or because they view other people and the world as hostile and threatening on the basis of earlier experiences (e.g. trauma). These beliefs will be closely associated with premorbid levels of anxiety and depression. In the context of these types of beliefs, anxiety and depression can influence the formation of persecutory delusions.

High levels of pre-existing anxiety will be particularly significant; the cognitive component of anxiety centres upon concern about impending danger, and such thoughts will be reflected in persecutory delusions. The most striking element of anxiety is the 'anticipation of danger' (DSM-IV; American Psychiatric Association, 1994). This is evident in worry, which can be viewed as 'the persistent awareness of possible future danger, which is repeatedly rehearsed without being resolved' (Mathews, 1990). The content of worry is physical, social, or psychological threat (Wells, 1994). Persecutory delusions too, by definition, concern anticipation of danger and have a content of physical, social, or psychological threat (Freeman & Garety, 2000). The thematic content of persecutory delusions and anxiety are the same, which is consistent with the hypothesis that anxiety is directly expressed in persecutory delusions. Anxiety is hypothesized to be the key emotion with regard to the formation of persecutory delusions, although other emotions (depression, anger, elation) may add further to the contents of the delusion. In short, in most cases the content of the delusion is consistent with the emotional state of the individual.

The explanations considered in the search for meaning will also be influenced by cognitive biases associated with psychosis (see Garety & Freeman (1999) for a review of the empirical literature). The 'jumping to conclusions' bias described by Garety, Hemsley, & Wessely (1991) may limit the amount of data gathered to support an explanation. The attributional bias proposed by Kinderman and Bentall (1997) may cause a tendency to blame others for the events. The Theory of Mind (ToM) dysfunction proposed by Frith (1992) may lead to errors in reading the intentions of other people.

From the internal or external events, pre-existing beliefs, and cognitive biases, explanations will be formed, though the three contributing factors will not, of course, be independent of each other. Thus, for instance, negative views about the self will often be reflected in derogatory voices, which in turn shape views about the self. The explanation chosen will be mediated by at least three other factors. The first mediator is beliefs about mental illness and 'madness' (Birchwood, 1995). Simply put, many patients have had to make a choice between something being wrong with them and something being wrong in the world. Believing that something is wrong with them (for instance, that they are becoming mad) may be a more distressing belief than that they are being persecuted, and hence a persecutory belief is more likely to be chosen in such circumstances. In this respect, there is an external attribution that limits the distress caused to individuals in terms of cost to self-esteem; this could be viewed as a defensive attribution. However, unlike Bentall (1994) it is not proposed that there is discrepancy between overt and covert self-esteem, and it is not proposed that such a choice between explanations occurs in all cases since some individuals consider no alternative to the delusion. The second mediator is social factors. If the person is isolated, unable to revise his or her thoughts on the basis of interactions with supportive others, then ideas

of threat are more likely to flourish. A similar process will occur if the person is reluctant to talk to others—he or she may be secretive or mistrustful (Cameron, 1959), or believe that personal matters should not be discussed with others. The final mediator is that if a person has little belief flexibility (a poor capacity for considering alternatives) (Garety *et al.*, 1997), or has a need for closure because of a difficulty in tolerating ambiguity, then they are more likely to accept the initial explanation: the anxious, persecutory belief.

In summary, persecutory delusions will arise from a search for meaning that reflects an interaction between psychotic processes, the pre-existing beliefs and personality of the individual, and the (often adverse) environment. Clearly a persecutory delusion is an attribution (i.e. a causal explanation for events). But, again, there are differences from the model of Bentall and colleagues. The attribution tradition, developed in research on depression, has concerned causal explanations for good or bad events (Abramson, Seligman, & Teasdale, 1978). Consequently, Bentall and colleagues argue that: ‘the deluded individual makes external, global and stable attributions for negative events to minimise the extent to which discrepancies between self-representations and self-guides are accessible to consciousness’. Attributions for negative events are central to the paranoia model proposed by Bentall and colleagues. In contrast it is observed in clinical practice that neutral events (e.g. a glance in the street), or even positive events (e.g. a smile), can be taken as threatening by individuals with persecutory delusions (e.g. the glance is a sign of plotting, the smile is a nasty one). The attribution can also be for an unusual or discrepant event—that is, an event that may not necessarily be threatening but that requires explanation (e.g. perceptual abnormalities or arousal).

A further complexity should be highlighted: two levels of attributions may be involved in delusion formation. The delusion can be an attribution for other attributions. The individual with a persecutory delusion may make attributions for events (e.g. seeing a person in the street glancing leads to the attribution ‘the person is watching me’ or ‘the look was a nasty one’), and the delusion may be an attribution for a number of these attributions (e.g. ‘that person was watching me’, ‘I was given a nasty look’ leads to the attribution ‘there must be a conspiracy, they are out to get me’). This raises the interesting issue of the links between delusions of reference and delusions of persecution. There is also a time dimension to the attributional process. Bentall and colleagues’ theory has the implication that a rapid attribution is made in order to prevent implicit negative schema becoming conscious. However, the formation of some delusions results from a lengthy search or investigatory process by the person (especially in cases preceded by delusional mood). There can a period of puzzlement, confusion, and surprise, which Maher describes in his writing. Why use the term ‘search for meaning’? The term is broad and can include within it attributions for negative events, neutral events and unusual events. It can incorporate the possibilities that the delusion is an attribution for several attributions and that the explanation process may take time. Search for meaning does not have such a close tie to self-esteem (it is theoretically more neutral). The term works well in clinical settings as it is easily understood.

Anxiety is given a central role in the model. Postulating a direct role for anxiety, in combination with psychotic processes, is novel in contemporary theories (but see Bleuler, 1911/1950). It is consistent with evidence that levels of anxiety are high many years before the development of psychosis, during the prodrome, and subsequently. Jones, Rodgers, Murray, & Marmot (1994) examined data gathered from a cohort of 5000 people all born in the same week in 1946 who were followed from birth. Children

who went on to develop schizophrenia were significantly more socially anxious at 13 years of age than those children who did not. Krabbendam Janssen, Bijl, Vollebergh, & van Os (2002) report data from a 3-year population sample study of 4000 individuals. High neuroticism and low self-esteem predicted first ever onset of psychotic symptoms. Tien and Eaton (1992) presented results from the NIMH Epidemiologic Catchment Area Program: the presence of anxiety 1 year before onset was a risk factor for development of delusions or hallucinations. Prospective, retrospective, and clinical studies find that in a majority of cases (60–80%) symptoms of anxiety, depression, and irritability precede by 2 to 4 weeks the appearance of positive symptoms, often accompanied by subtle cognitive changes and, later, by low-level psychotic phenomena (see reviews by Birchwood, Macmillan, & Smith, 1992; Docherty, Van Kammen, Siris, & Marder, 1978; Yung & McGorry, 1996). The presence of anxiety has been studied in individuals who have positive symptoms (i.e. are symptomatic at the time). Anxiety has been found to be frequently comorbid with schizophrenia (Argyle, 1990; Cosoff & Hafner, 1998; Foulds & Bedford, 1975; Moorey & Soni, 1994; see review by Turnbull & Bebbington (2001)). For instance, Cosoff and Hafner (1998) report 43% of 60 consecutive in-patients with schizophrenia having an anxiety disorder. In a longitudinal study, Norman and Malla (1994) showed that anxiety and depression are more strongly related to positive symptoms than to negative symptoms. The authors report a further study in which anxiety was found to be more strongly related than depression to delusions and hallucinations (Norman, Malla, Cortese, & Diaz, 1998). Finally, a role for anxiety in delusion formation is consistent with findings of high rates of trauma and PTSD in individuals with severe mental illness (Mueser *et al.*, 1998), and with early abuse being reflected in the content of delusions (Read & Argyle, 1999).

Such consistent findings of high levels of emotional distress throughout the course of delusions and hallucinations supports the hypothesis that emotion has a direct contributory role to positive symptom development. However, it could equally be argued that emotion is simply a consequence of psychotic symptoms. For example, some authors suggest (most famously Chapman, 1966) that the emotional disturbance that occurs in the prodromal phase of illness is a consequence of subtle (attentional and perceptual) changes associated with psychosis. However it is the ubiquitous presence of emotional disturbance *prior* to full symptoms that is the key finding with regard to its potential influence on delusions: even if anxiety is a consequence of another psychological dysfunction, in preceding the frank occurrence of positive symptoms, it may still have a role in symptom formation. In addition, as Yung and McGorry (1996) propose, it is plausible to suggest that there are interactions between anxiety and more specific dysfunction (such as perceptual changes) prior to the appearance of positive symptoms. This argument also follows for emotion caused by the formed psychotic symptom. Any anxiety generated by a delusion is likely to alter the processing of the individual and therefore may play a part in the maintenance of the belief.

The maintenance of the delusion

Persecutory delusions are conceptualized as threat beliefs. They are reinforced by the relief that comes with an explanation (Maher, 1988), the knowledge that the person is not 'losing their mind', and the confirmation of pre-existing ideas and beliefs. Maintaining factors can then be divided into two types: those that result in the obtaining of confirmatory evidence and those that lead to disconfirmatory evidence

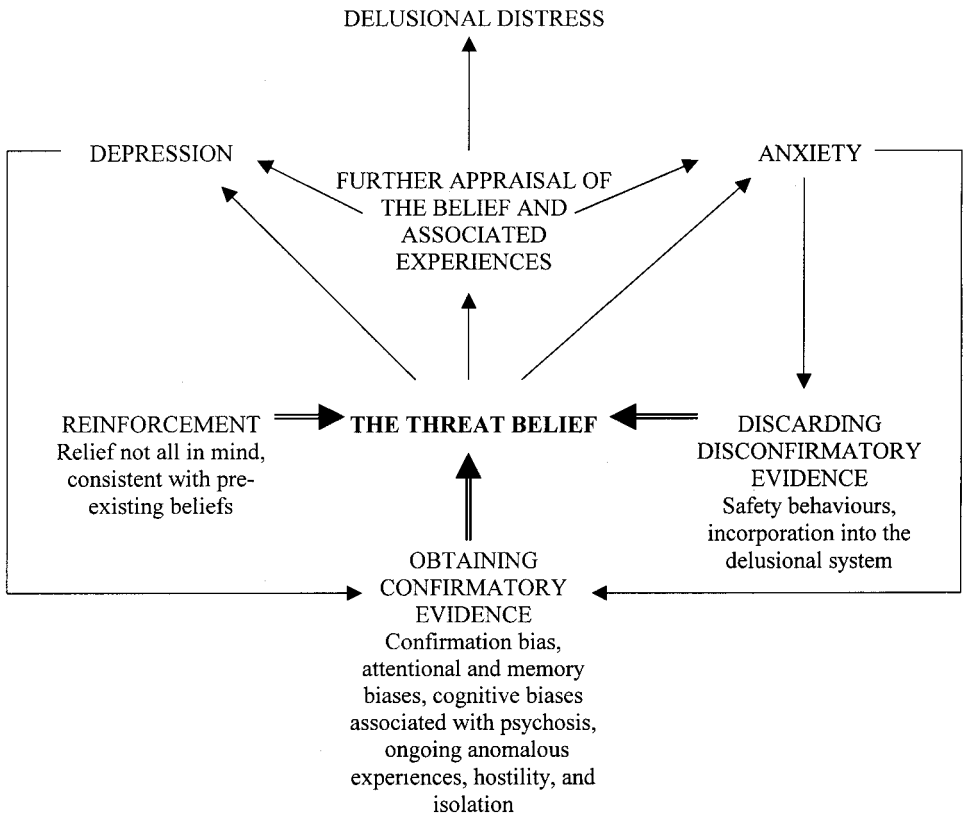


Figure 2. Summary of the maintenance of a persecutory delusion.

being discarded. The more maintenance factors that are present, the more likely that the delusion will persist.

There are a number of ways in which confirmatory evidence is obtained. The normal belief confirmation bias will operate: individuals will look for evidence consistent with their beliefs (Maher, 1988). Attentional biases will come on-line, as is found in emotional disorders: threat will be preferentially processed (Bentall & Kaney, 1989); threatening interpretations of ambiguous events will be made; and such biases are likely to be enhanced by a self-focused cognitive style (Freeman, Garety, & Phillips, 2000). Memory biases, which may be associated with emotional disorder (e.g. intrusive trauma memories), will lead to frequent presentations in the mind of the individual of the evidence for the delusion. Continuing anomalous experiences (often triggered by anxiety), and the cognitive biases associated with psychosis, will also provide evidence consistent with the threat belief. Finally, the person's interactions with others may become disturbed. The person may act upon their delusion in a way that elicits hostility or isolation (e.g. by being aggressive, or treating others suspiciously), and they may suffer stigma (Wahl, 1999). In essence, others may act differently around the person, or break contact with them, thus confirming persecutory ideas.

But why does the persecutory belief remain for such a length of time when the predicted harm has not actually happened? Some individuals live in fear that their persecutors are about to ring their doorbell, but the persecutors have never called.

Some are convinced that governmental organizations are going to kill them, yet they are still alive. It is argued that potentially disconfirming evidence is discarded in two main ways.

The first main way is by the use of safety behaviours. Safety behaviours is an important concept developed by Salkovskis (1991, 1996) to explain the maintenance of threat beliefs in anxiety disorders, and has since has been applied to persecutory delusions (Freeman, 1998; Freeman, Garety, & Kuipers, 2001; Morrison, 1998). It is hypothesized that individuals with persecutory delusions take actions designed to reduce the threat, but which actually prevent disconfirmatory evidence being received or fully processed. To explain the absence of the feared outcome, individuals can reason that their safety behaviours have prevented harm, rather than that the harm was not going to occur in any case. Potentially disconfirming evidence is rendered ineffective by turning the situation into a 'near miss' ('The persecution would have occurred if I hadn't ...'). The use of avoidance behaviours will have the additional effect of limiting the amount and detail of potentially disconfirming evidence received. Types of safety behaviours reported by individuals with persecutory delusions include avoidance, escape, within-situation behaviours, compliance, and aggression (Freeman *et al.*, 2001). Higher levels of anxiety associated with the delusion will lead to greater use of safety behaviours, consistent with the literature concerning acting upon delusions (Buchanan *et al.*, 1993).

The second way in which disconfirmatory evidence may be discarded is by incorporating the failure of predicted harm events into the delusional system. Only Melges and Freeman (1975) make passing reference to this issue when they set out their cybernetic model of persecutory delusions:

The ruminative vicious cycle common to this stage can be paraphrased as follows: 'If I do this, they will do that; and if they don't do that, it's because they are pretending (much like I am) in order to catch me off guard later on.' In this way, his predictions appear confirmed no matter what happens, and his seemingly correct predictions ensnare him further in what seems to be a preordained web of events determined by others.

In other words, disconfirmatory evidence is dismissed because individuals view it as instances of the deviousness of the persecutors. They may say, 'I can't be sure of the exact plans of my tormentors, but in the end they'll get me'. Or individuals may believe that they have been lucky, or that other powers are acting in their favour. Some patients have attributed bad events that do happen (e.g. loss of a job, illness, mugging) to the persecutors, take this as an indication that worse will follow, and can therefore disregard inconsistent evidence.

The emotion associated with the delusion

The model includes hypotheses concerning the emotional distress associated with the delusion (delusional distress, anxiety, and depression), based upon the findings of Freeman *et al.* (2001). It is hypothesized that emotional distress arises in two ways: from the content of the delusion and from further appraisal of the delusion and associated experiences.

At the simplest level, emotional experiences are directly associated with the content of delusional beliefs. The cognitive content of emotions will have been expressed in the delusions and, in turn, the content of the delusions will contribute to the maintenance

and exacerbation of the emotion. Negative beliefs about the self, others, and the world, which are associated with emotional distress, influence, and are reflected in, the contents of delusions. Once the delusion is formed, it is likely to feedback and confirm affect-related beliefs, leading to the persistence and enhancement of emotional distress. Anxiety will directly result from the threat belief. In particular, beliefs about the pervasiveness of threat and the presence of rescue factors will influence levels of anxiety. The threat belief will reaffirm and exacerbate previously held ideas about vulnerability or hostility. Levels of delusional distress will be higher for individuals who believe that the harm will be extremely awful and that it is very likely to occur. Depression will be associated with beliefs about the power of the persecutors (Chadwick & Birchwood, 1994) and about whether the persecution is deserved punishment (Trower & Chadwick, 1995). If persecutors are believed to be extremely powerful, this will reinforce and increase depression. Similarly, if individuals had been depressed, and believed that they deserved to be harmed, then the threat belief will confirm their depressive thoughts and hence increase depression. The link between delusions and depression is consistent with observations that depression is frequently comorbid with the acute symptoms of psychosis but remits with recovery (Birchwood, Iqbal, Chadwick, & Trower, 2000; House, Bostock, & Cooper 1987; Koreen *et al.*, 1993).

The second way in which emotion is generated concerns further appraisal, in relation to the self, of the contents of the delusional belief and of the actual delusional experience itself, the importance of which will vary from individual to individual. The further appraisal may increase the negative emotional reaction to the delusional belief, and lead to the person becoming 'stuck in psychosis' (Fowler, 2000). Depression will result from negative appraisals of the delusion or delusional thoughts in relation to the self: e.g., that the persecution or persecutory thoughts are a sign of failure or badness. For some individuals, the negative beliefs about the self are long term, precede delusion formation, and were already reflected in the contents of the delusion. However, for other individuals, appraisal of the delusion can trigger ideas of failure or badness. Depression will also occur if individuals believe upon reflection that they have no control over the persecutory situation, and that this seems to be true of many areas of their lives. Additional anxiety may result from appraisals concerning vulnerability, hostility, and danger. Delusional distress will be associated with appraisals of the experience of delusional thoughts (Freeman & Garety, 1999). Higher levels of delusional distress will be associated with worries about a lack of control of persecutory thoughts, particularly in individuals with a longer illness history. Contributing to these feelings of uncontrollability will be the counterproductive use of thought control strategies.

The importance of each of the two paths to emotional distress will vary from individual to individual. Further appraisal may be elaborate and negative for some individuals, while in other cases it may be fleeting and not a source of concern. Negative views of the self may already be incorporated into the contents of delusions, and hence the contribution of further appraisal in these cases is minimal; negative views of the self may be contained within the contents of the delusions if appraisals had occurred at an early stage of delusion formation, or low self-esteem had driven the delusions, such as in Bad-Me paranoia (Trower & Chadwick, 1995).

Clinical implications

The model identifies a number of processes that may form and maintain persecutory delusions. Careful assessment will be needed to determine those that operate in the individual case. Also, given the conceptualization of persecutory delusions as threat beliefs, and the high levels of anxiety found in this group, the clinician needs to be especially attentive to issues of rapport (see Chadwick, Birchwood, & Trower, 1996; Fowler, Garety, & Kuipers, 1995; Kingdon & Turkington, 1994). Furthermore, the model suggests that individuals will be especially sensitive to clinicians viewing them as mad or mentally ill. Emphasis is placed in the model on beliefs about illness; it is hypothesized that individuals who develop persecutory delusions do not have any alternative explanations that are palatable in comparison with the delusional explanation. Therefore, a key aim of therapy must be to construct with clients alternative non-delusional models of experiences that are acceptable to them and not stigmatizing. The therapist will need to explore the meaning for individuals of different explanations for their experiences (including the delusional explanations). Normalizing is helpful (Kingdon & Turkington, 1994), but a plausible, biases-in-psychological-processing explanation is particularly valuable (Fowler *et al.*, 1995; Freeman & Garety, 2002). An individualized explanation is needed of how psychological processes may lead to specific subjective experiences; this is central to cognitive therapy for all disorders. However, the emphasis of an explanation will clearly depend primarily on what is acceptable and helpful to clients.

Conceptualizing persecutory delusions as threat beliefs leads to the ideal objective of therapy being the reduction of emotional distress via change in the degree of conviction in the threat beliefs. Evaluating delusional beliefs and alternative explanations is a key technique. The model indicates that some coping strategies could act as safety behaviours that prevent delusional belief change and maintain emotional distress. However, the use of coping strategies with people with psychosis will need to be pragmatic, and based upon careful individualized formulation to identify the potential advantages and disadvantages of each coping strategy. Coping strategies can be used early in therapy to build trust in the relationship, or to deal with high levels of emotional distress before going on to evaluate beliefs (Fowler *et al.*, 1995), when the use of such strategies would be discouraged. Some individuals are unwilling to evaluate their delusional beliefs, and coping strategies can be a helpful technique in reducing emotional distress. Coping strategies that reduce focus upon delusions, that allow distancing, but that do not deliberately suppress delusional thoughts, are more favourable than coping strategies that have the opposite consequences. Those strategies that help the person to deal with distress while engaged in activity (and hence provide an opportunity for the person to be less self-focused) will on the whole be better than ones that try to deal with distress simply by withdrawal. Strategies that contribute to the person being locked into the delusional system, providing little opportunity for him or her to receive disconfirmatory evidence, should preferably not be used. The therapist should consider the coping strategy in relation to the individual formulation, and, ideally, discuss with the person how the strategy works, or does not work, from this perspective.

The individualized model can guide the intervention. In particular, altering the identified maintenance factors (e.g. reasoning and attentional biases) will be central to a good outcome. Ideally, this should be carried out with the goal in mind of evaluating the delusional versus the psychological explanations of experiences. A clinically useful

manoeuvre is to address safety behaviours (Freeman & Garety, 2002). A client giving up a safety behaviour is a test of the function of the behaviour; but it is also a test of the threat belief, albeit a less direct one than the belief challenging more routinely used in cognitive therapy for psychosis (see Chadwick & Lowe, 1994). A further benefit is that by reducing the constrictions imposed on the person's life by the safety behaviours there may be associated increases in feelings of control and therefore reductions in depression.

The model highlights the importance of addressing the emotional distress associated with a delusion, and this is particularly the case when an individual is unwilling to consider alternative explanations to the delusional belief. Discussing the links between the content of a delusion and how the person is feeling can be empathic and normalizing, and can suggest beliefs that can be targeted to cause changes in emotional experiences. For instance, beliefs about the power of the persecutor can be evaluated, as in the innovative work on cognitive therapy for voices (Chadwick *et al.*, 1996). Changes in such beliefs may reduce depression and be a gentle challenge to central parts of the persecutory delusions. It is also useful in the early stages of therapy simply to think through the details of the threat with the client. For instance, it may be helpful to ask the person when the threat is most likely to occur. This may prompt the person to consider why the harm has not actually materialized (i.e. to process disconfirmatory evidence)—it may make them less anxious and it may provide insights into how the belief can be evaluated. Overall, then, targeting aspects of the content of a delusion may lead to emotional changes and may begin to weaken the conviction in the delusion. Such a process may socialize the person into the cognitive approach and lead to greater success when more direct testing of the delusion is attempted.

Individuals' appraisals of their delusional beliefs and associated experiences may have led to emotional distress. Therefore, the use of thought chaining from the delusion, and checking for the presence of meta-worry, may be helpful in the assessment stage. Beliefs about the self, others, and the world, may need re-evaluating. In some cases (e.g. if it is believed that the persecution is deserved) addressing these beliefs will be a main goal of therapy. However, in many other cases, it will be a later target, with particular regard to relapse prevention.

Finally, the model also highlights the social world's importance in the formation and maintenance of the delusion. Social factors are sometimes overlooked in cognitive interventions with their emphasis upon internal processes. However, relationships with others, levels of expressed emotion, and beliefs about talking with others, may also be valuable topics for discussion in therapy.

Indications for further research

The model indicates many research paths. What are the newer directions it highlights? Exploration of the variety and types of explanations that clients have available for the experiences their persecutory beliefs are intended to explain will clearly be of interest. The types of internal and external events that contribute to delusion development remain to be determined empirically. The model allows for events that may be negative, neutral, or even positive to be incorporated into the delusion. Investigation of direct roles for emotion in delusion development is needed, bringing the study of neurosis and psychosis closer together (see Freeman & Garety, in press). Detailed study of how disconfirmatory evidence is discarded would be valuable. Further study of the content

of delusional systems would be greatly beneficial; this can be investigated in relation to emotional experiences and key beliefs about the self, others, and the world. Attention needs to be given to the patients' relationships with their persecutors and the identity of the persecutors, as Birchwood, Meaden, Trower, Gilbert, & Plaistow (2000) have considered for voices. Individuals' appraisals of their delusional beliefs and associated experiences require further investigation. These topic areas are underdeveloped and need basic work in terms of questionnaire development, cross-sectional studies assessing the presence of the cognitive factors, and longitudinal studies assessing their influence.

It remains to be determined whether the cognitive biases associated with persecutory delusions are state or trait variables or whether a differential activation relationship exists such as in depression (Teasdale, 1988). Manipulation of the key variables in individuals with persecutory delusions will be an important step in determining causal roles. Study of cognitive processes associated with delusions across disorders is also likely to be a valuable strategy. Delusions have been studied from a cognitive perspective in non-affective functional psychosis but they occur in many other disorders (Manschreck & Petri, 1978; Coryell & Tsuang, 1982; Cummings, 1992; Cutting, 1987; Trimble, 1992). A strength of such a research strategy is that it facilitates investigation as to whether there are psychological processes that are specific to the occurrence of delusions in each disorder. In order to study delusion-specific factors a closely matched control group of individuals without delusions is needed; it is difficult to recruit a control group of individuals with schizophrenia who have never had delusions but the task is simpler for individuals with depression and individuals with neurological disorder. Furthermore, it is significant for the new model of persecutory delusions that delusions in mood disorders such as bipolar disorder and depression are associated with emotion (by diagnostic definition). This is a clear indication of direct roles for emotion in delusion formation and maintenance.

Finally, the model highlights the interaction between psychotic processes, non-psychotic processes, and the environment; cognitive investigation into how each affects the other will be of great interest.

Acknowledgements

This work was supported by a programme grant from the Wellcome Trust.

References

- Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology, 87*, 49–74.
- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Association.
- Argyle, N. (1990). Panic attacks in chronic schizophrenia. *British Journal of Psychiatry, 157*, 430–433.
- Bentall, R. P. (1994). Cognitive biases and abnormal beliefs: Towards a model of persecutory delusions. In A. S. David & J. Cutting (Eds.), *The neuropsychology of schizophrenia* (pp. 337–360). London: Erlbaum.
- Bentall, R. P., & Kaney, S. (1989). Content specific processing and persecutory delusions: An investigation using the emotional Stroop test. *British Journal of Medical Psychology, 62*, 355–364.

- Bentall, R. P., & Kaney, S. (1996). Abnormalities of self-representation and persecutory delusions: A test of a cognitive model of paranoia. *Psychological Medicine*, *26*, 1231–1237.
- Bentall, R. P., & Kinderman, P. (1998). Psychological processes and delusional beliefs: Implications for the treatment of paranoid states. In T. Wykes, N. Tarrier, & S. Lewis (Eds.), *Outcome and innovation in psychological treatment of schizophrenia* (pp. 119–144). Chichester: Wiley.
- Bentall, R. P., & Kinderman, P. (1999). Self-regulation, affect and psychosis: The role of social cognition in paranoia and mania. In T. Dalgleish & M. Power (Eds.), *Handbook of cognition and emotion* (pp. 353–382). Chichester: Wiley.
- Bentall, R. P., Kinderman, P., & Kaney, S. (1994). The self, attributional processes and abnormal beliefs: Towards a model of persecutory delusions. *Behaviour Research and Therapy*, *32*, 331–341.
- Birchwood, M. (1995). Early intervention in psychotic relapse: cognitive approaches to detection and management. In G. Haddock & P. Slade (Eds.), *Cognitive behavioural interventions with psychotic disorders* (pp. 171–211). London: Routledge.
- Birchwood, M., Iqbal, Z., Chadwick, P., & Trower, P. (2000). Cognitive approach to depression and suicidal thinking in psychosis I: Ontogeny of post-psychotic depression. *British Journal of Psychiatry*, *177*, 516–521.
- Birchwood, M., Macmillan, F., & Smith, J. (1992). Early intervention. In M. Birchwood & N. Tarrier (Eds.), *Innovations in the psychological management of schizophrenia*. (pp. 115–145). Chichester: Wiley.
- Birchwood, M., Meaden, A., Trower, P., Gilbert, P., & Plaistow, J. (2000). The power and omnipotence of voices: Subordination and entrapment by voices and significant others. *Psychological Medicine*, *30*, 337–344.
- Bleuler, E. (1911/1950). *Dementia praecox or the group of schizophrenias*. (E. Zinkin, Trans.). New York: International Universities Press.
- Bowins, B., & Shugar, G. (1998). Delusions and self-esteem. *Canadian Journal of Psychiatry*, *43*, 154–158.
- Buchanan, A., Reed, A., Wessely, S., Garety, P., Taylor, P., Grubin, D., & Dunn, G. (1993). Acting on delusions II: The phenomenological correlates of acting on delusions. *British Journal of Psychiatry*, *163*, 77–81.
- Bunney, W. E., Hetrick, W. P., Bunney, B. G., Patterson, J. V., Jin, Y., Potkin, S. G., & Sandman, C. A. (1999). Structured interview for assessing perceptual anomalies (SIAPA). *Schizophrenia Bulletin*, *25*, 577–592.
- Cameron, N. (1959). The paranoid pseudo-community revisited. *American Journal of Sociology*, *65*, 52–58.
- Castle, D. J., Phelan, M., Wessely, S., & Murray, R. M. (1994). Which patients with non-affective functional psychosis are not admitted at first psychiatric contact? *British Journal of Psychiatry*, *165*, 101–106.
- Chadwick, P. D. J. & Birchwood, M. J. (1994). The omnipotence of voices: A cognitive approach to hallucinations. *British Journal of Psychiatry*, *164*, 190–201.
- Chadwick, P. D. J., Birchwood, M. J., & Trower, P. (1996). *Cognitive therapy for delusions, voices and paranoia*. Chichester: Wiley.
- Chadwick, P.D.J., & Lowe, C.F. (1994). A cognitive approach to measuring delusions. *Behaviour Research and Therapy*, *32*, 355–367.
- Chapman, J. (1966). The early symptoms of schizophrenia. *British Journal of Psychiatry*, *112*, 225–251.
- Clark, D. M. (1999). Anxiety disorders: Why they persist and how to treat them. *Behaviour Research and Therapy*, *37*, S5–S27.
- Clark, D. M. & Fairburn, C. G. (1997). *Science and practice of cognitive behaviour therapy*. Oxford: Oxford University Press.
- Coryell, W., & Tsuang, M. T. (1982). Primary unipolar depression and the prognostic importance of delusions. *Archives of General Psychiatry*, *39*, 1181–1184.

- Cosoff, S. J., & Hafner, R. J. (1998). The prevalence of comorbid anxiety in schizophrenia, schizoaffective disorder and bipolar disorder. *Australian and New Zealand Journal of Psychiatry*, *32*, 67–72.
- Cummings, J. L. (1992). Psychosis in neurologic disease: Neurobiology and pathogenesis. *Neuropsychiatry, Neuropsychology and Behavioural Neurology*, *5*, 126–131.
- Cutting, J. (1987). The phenomenology of acute organic psychosis. *British Journal of Psychiatry*, *151*, 324–332.
- Cutting, J. (1997). *Principles of psychopathology: Two worlds-two minds-two hemispheres*. Oxford: Oxford University Press.
- Docherty, J. P., Van Kammen, D. P., Siris, S. G., & Marder, S. R. (1978). Stages of onset of schizophrenic psychosis. *American Journal of Psychiatry*, *135*, 420–426.
- Ebel, H., Gross, G., Klosterkotter, J., & Hiber, G. (1989). Basic symptoms in schizophrenic and affective psychoses. *Psychopathology*, *22*, 224–232.
- Foulds, G. A., & Bedford, A. (1975). Hierarchy of classes of personal illness. *Psychological Medicine*, *5*, 181–192.
- Fowler, D. (2000). Psychological formulation of early episodes of psychosis: a cognitive model. In M. Birchwood, D. Fowler, & C. Jackson (Eds.), *Early intervention in psychosis: A guide to concepts, evidence and interventions* (pp. 101–127). Chichester: Wiley.
- Fowler, D., Garety, P. A., & Kuipers, L. (1995). *Cognitive behaviour therapy for psychosis: Theory and practice*. Chichester: Wiley.
- Freedman, B., & Chapman, L. J. (1973). Early subjective experience in schizophrenic episodes. *Journal of Abnormal Psychology*, *82*, 46–54.
- Freeman, D. (1998). *Neurosis and psychosis*. Unpublished Ph.D. thesis, University of London.
- Freeman, D., & Garety, P. A. (1999). Worry, worry processes and dimensions of delusions: An exploratory investigation of a role for anxiety processes in the maintenance of delusional distress. *Behavioural and Cognitive Psychotherapy*, *27*, 47–62.
- Freeman, D., & Garety, P. A. (2000). Comments on the content of persecutory delusions: Does the definition need clarification? *British Journal of Clinical Psychology*, *39*, 407–414.
- Freeman, D., & Garety, P. A. (2002). Cognitive therapy for an individual with a long-standing persecutory delusion: Incorporating emotional processes into a multi-factorial perspective on delusional beliefs. In T. Morrison (Ed.), *From theory to practice: A casebook of cognitive therapy for psychosis* (pp. 173–196). Wiley: Chichester.
- Freeman, D. & Garety, P.A. (in press). Connecting neurosis and psychosis: The direct influence of emotion on delusions and hallucinations. *Behaviour, Research & Therapy*.
- Freeman, D., Garety, P. A., & Kuipers, E. (2001). Persecutory delusions: Developing the understanding of belief maintenance and emotional distress. *Psychological Medicine* *31*, 1293–1306.
- Freeman, D., Garety, P. A., & Phillips, M. L. (2000). An examination of hypervigilance for external threat in individuals with generalised anxiety disorder and individuals with persecutory delusions using visual scan paths. *Quarterly Journal of Experimental Psychology*, *53A*, 549–567.
- Freeman, D., Garety, P., Fowler, D., Kuipers, E., Dunn, G., Bebbington, P., & Hadley, C. (1998). The London–East Anglia randomised controlled trial of cognitive behaviour therapy for psychosis IV: Self-esteem and persecutory delusions. *British Journal of Clinical Psychology*, *37*, 415–430.
- Frith, C. D. (1992). *The cognitive neuropsychology of schizophrenia*. Hove: IEA.
- Garety, P. A., Fowler, D., Kuipers, E., Freeman, D., Dunn, G., Bebbington, P. E., Hadley, C., & Jones, S. (1997). The London–East Anglia randomised controlled trial of cognitive behaviour therapy for psychosis II: Predictors of outcome. *British Journal of Psychiatry*, *171*, 420–426.
- Garety, P. A., & Freeman, D. (1999). Cognitive approaches to delusions: A critical review of theories and evidence. *British Journal of Clinical Psychology*, *38*, 113–154.
- Garety, P. A., & Hemsley, D. R. (1994). *Delusions: Investigations into the psychology of delusional reasoning*. Oxford: Oxford University Press.

- Garety, P. A., Hemsley, D. R., & Wessely, S. (1991). Reasoning in deluded schizophrenic and paranoid patients: Biases in performance on a probabilistic inference task. *Journal of Nervous and Mental Disorder*, *179*, 194–201.
- Garety, P. A., Kuipers, E., Fowler, D., Freeman, D., & Bebbington, P. E. (2001). A cognitive model of the positive symptoms of psychosis. *Psychological Medicine*, *31*, 189–195.
- Hemsley, D. R. (1987). An experimental psychological model for schizophrenia. In H. Hafner, W. F. Gattaz, & W. Janzarik (Eds.), *Search for the causes of schizophrenia* (pp. 179–188). Heidelberg: Springer.
- House, A., Bostock, J., & Cooper, J. (1987). Depressive syndromes in the year following onset of a first schizophrenic illness. *British Journal of Psychiatry*, *151*, 773–779.
- Jones, P., Rodgers, B., Murray, R., & Marmot, M. (1994). Child developmental risk factors for adult schizophrenia in the British 1946 birth cohort. *Lancet*, *344*, 1398–1402.
- Kinderman, P. (1994). Attentional bias, persecutory delusions and the self-concept. *British Journal of Medical Psychology*, *67*, 53–66.
- Kinderman, P., & Bentall, R. P. (1997). Causal attributions in paranoia and depression: Internal, personal and situational attributions for negative events. *Journal of Abnormal Psychology*, *106*, 341–345.
- Kingdon, D. G., & Turkington, D. (1994). *Cognitive behaviour therapy of schizophrenia*. Hove: Erlbaum.
- Koreen, A. R., Siris, S. G., Chakos, M., Alvir, J., Mayerhoff, D., & Lieberman, J. (1993). Depression in first-episode schizophrenia. *American Journal of Psychiatry*, *150*, 1643–1648.
- Krabbendam, L., Janssen, I., Bijl, R. V., Vollebergh, W. A. M., & van Os, J. (2002). Neuroticism and low self-esteem as risk factors for psychosis. *Social Psychiatry and Psychiatric Epidemiology*, *37*, 1–6.
- Lyon, H. M., Kaney, S., & Bentall, R. P. (1994). The defensive function of persecutory delusions: Evidence from attribution tasks. *British Journal of Psychiatry*, *164*, 637–646.
- Maher, B. A. (1988). Anomalous experience and delusional thinking: The logic of explanations. In T. F. Oltmanns & B. A. Maher (Eds.), *Delusional Beliefs* (pp. 15–33). New York: Wiley.
- Manschreck, T. C. & Petri, M. (1978). The paranoid syndrome. *Lancet*, *2*, 251–253.
- Mathews, A. (1990). Why worry? The cognitive function of anxiety. *Behaviour Research and Therapy*, *28*, 455–468.
- McGhie, A., & Chapman, J. (1961). Disorders of attention and perception in early schizophrenia. *British Journal of Medical Psychology*, *34*, 103–116.
- Melges, F. T., & Freeman, A. M. (1975). Persecutory delusions: a cybernetic model. *American Journal of Psychiatry*, *132*, 1038–1044.
- Moorey, H., & Soni, S. D. (1994). Anxiety symptoms in stable chronic schizophrenics. *Journal of Mental Health*, *3*, 257–262.
- Morrison, A. P. (1998). Cognitive behaviour therapy for psychotic symptoms in schizophrenia. In N. Tarrier, A. Wells, & G. Haddock (Eds.), *Treating complex cases: The cognitive behavioural therapy approach* (pp. 195–216). Wiley: Chichester.
- Mueser, K. T., Goodman, L. B., Trumbetta, S. L., Rosenberg, S. D., Osher, F. C., Vidaver, R., Auciello, P., & Foy, D. W. (1998). Trauma and posttraumatic stress disorder in severe mental illness. *Journal of Consulting and Clinical Psychology*, *66*, 493–499.
- Norman, R. M., & Malla, A. K. (1994). Correlations over time between dysphoric mood and symptomatology in schizophrenia. *Comprehensive Psychiatry*, *35*, 34–38.
- Norman, R. M. G., Malla, A. K., Cortese, L., & Diaz, F. (1998). Aspects of dysphoria and symptoms of schizophrenia. *Psychological Medicine*, *28*, 1433–1441.
- Read, J., & Argyle, N. (1999). Hallucinations, delusions, and thought disorder among adult psychiatric inpatients with a history of child abuse. *Psychiatric Services*, *50*, 1467–1472.
- Salkovskis, P. M. (1991). The importance of behaviour in the maintenance of anxiety and panic: A cognitive account. *Behavioural Psychotherapy*, *19*, 6–19.
- Salkovskis, P. M. (1996). The cognitive approach to anxiety: Threat beliefs, safety-seeking

- behaviours, and the special case of health anxiety and obsessions. In P. M. Salkvoskis (Ed.), *Frontiers of cognitive therapy* (pp. 48–74). New York: Guilford Press.
- Teasdale, J. D. (1988). Cognitive vulnerability to persistent depression. *Cognition and Emotion*, *2*, 247–274.
- Tien, A. Y., & Eaton, W. W. (1992). Psychopathologic precursors and sociodemographic risk factors for the schizophrenia syndrome. *Archives of General Psychiatry*, *49*, 37–46.
- Trimble, M. R. (1992). The schizophrenia-like psychosis of epilepsy. *Neuropsychiatry, Neuropsychology and Behavioural Neurology*, *5*, 103–107.
- Trower, P., & Chadwick, P. (1995). Pathways to defense of the self: A theory of two types of paranoia. *Clinical Psychology: Science and Practice*, *2*, 263–278.
- Turnbull, G., & Bebbington, P. (2001). Anxiety and the schizophrenic process: Clinical and epidemiological evidence. *Social Psychiatry and Psychiatric Epidemiology*, *36*, 235–243.
- Wahl, O. F. (1999). Mental health consumers' experience of stigma. *Schizophrenia Bulletin*, *25*, 467–478.
- Wells, A. (1994). A multi-dimensional measure of worry: Development and preliminary validation of the anxious thoughts inventory. *Anxiety, Stress and Coping*, *6*, 289–299.
- Wessely, S., Buchanan, A., Reed, A., Cutting, J., Everitt, B., Garety, P., & Taylor, P. J. (1993). Acting on delusions (1): Prevalence. *British Journal of Psychiatry*, *163*, 69–76.
- World Health Organization (1973). *The International Pilot Study of Schizophrenia*. Geneva: World Health Organization.
- Yung, A. R. & McGorry, P. D. (1996). The prodromal phase of first-episode psychosis: Past and current conceptualizations. *Schizophrenia Bulletin*, *22*, 353–370.

Received 27 October 2000; revised version received 12 October 2001