

# Cognitive behaviour therapy for psychosis

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**SUMMARY.** **Aims** – It used to be thought that the problems of psychosis were qualitatively different from those of other disorders and therefore unamenable to psychological interventions. However more recent evidence will be summarised which suggests otherwise. **Methods** – A cognitive model of the positive symptoms of psychosis (Garety *et al.*, 2001; Kuipers *et al.*, 2006) is described which builds on work on the dimensions of symptoms of psychosis, the continuum between non-clinical and clinical populations, and the contribution of emotional processes, cognitive reasoning biases and social factors. **Results** – Evidence from both epidemiological and empirical studies from our research group and others, support some of the pathways of symptom formation and maintenance proposed by the model. Specifically there is evidence for the role of trauma, social adversity and stress. These may trigger emotional responses and unusual experiences and together with reasoning biases lead to appraisals that can be defined as positive symptoms such as delusions and hallucinations. Similar processes interact to maintain symptoms. **Conclusions** – Cognitive models of psychosis have led to the development of cognitive behavioural treatments for delusions and hallucinations, which show some evidence of efficacy. Such treatments need to be refined in the light of recent research.

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## INTRODUCTION

“By early 1994 I had cut off all links with the outside world. I abandoned all the clubs and societies I had joined over the years. I was receiving no mail except my giro. My single remaining friend contacted me, and I told him that my liberties had been removed by computer and I hurried to end the conversation ... I had slipped into a new level of paranoia, convinced that the whole world was to blame for my illness”. (Bellamy, 2000).

Psychosis is one of the most severe and distressing mental health problems, whereby individuals may experience disruption to their thinking, distressing hallucinations and delusions and difficulties in daily functioning. It is associated with a high likelihood of persistent symptoms, repeated relapses, a lifetime risk of suicide of at least 5% (Palmer *et al.*, 2005), severe social disabilities, poor subsequent employment, distress and burden in carers (Thornicroft *et al.*, 2004), poor physical health (Cormac *et al.*, 2005), high service use, and accompanying high costs to society (Knapp *et al.*, 2004). While medication is the

first line of treatment, it is often poorly tolerated and a proportion remain treatment resistant despite adequate trials of antipsychotics (Kane, 1996; Lieberman *et al.*, 2005).

Our understanding of the difficulties faced by those with these problems initially focused on biological mechanisms. Symptoms such as delusions were seen as different from normal experiences, and typically as not responding to rational argument or even as being understandable (Berrios, 1996). Pessimism about the usefulness of psychological therapies for psychosis was confirmed by an influential review by Mueser & Berenbaum (1990) showing that intensive psychodynamic therapy could even make things worse.

However, more recently, several strands of psychological research have converged to provide the setting for the development of new psychological treatments for psychosis, and this has begun to change the professional view of clinicians to one of guarded optimism. Perhaps even psychosis might be amenable to the cognitive behavioural approaches found to be successful in other disorders such as anxiety and depression (Brown *et al.*, 2005; Beck 2005).

## COGNITIVE MODELS OF PSYCHOSIS

More recent cognitive models of psychosis have considered the range of emotional, cognitive and social factors

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that might combine to predict the development and maintenance of positive symptoms. A model developed for using with prodromal and early onset disorders has focussed on culturally unacceptable appraisals of intrusions leading to symptoms of psychosis (Morrison, 2001). Our models (Garety *et al.*, 2001, Freeman *et al.*, 2002, Kuipers *et al.*, 2006a) have incorporated not only the appraisal of intrusions, but also the evidence that people who develop psychosis may have ongoing cognitive processing difficulties that interact with emotional reactions, and then invoke catastrophic appraisals that unusual experiences are external (Fowler *et al.*, 2006b). Such reactions are seen as being in the context of ongoing biological and social vulnerabilities, and are likely to be triggered by stressful events.

### Psychosis as a continuum

Many studies have now demonstrated that there is considerable overlap between the experiences of clinical and non-clinical groups. As early as the 1980s Slade & Bentall (1988) showed that 25% of the normal population experienced hallucinations at least once. Romme *et al.* (1992) in an influential study, found that 30% had experienced hallucinations; further the difference between those in contact with service and those not, was the amount of distress. Tien (1991) in a population study demonstrated that 4-5% of the population had experienced hallucinations. This was confirmed by Johns & Van Os (2001) in a UK population survey. More recently, Freeman *et al.* (2005) has shown that up to 30% of a non clinical population have paranoid ideas. Again, this has been confirmed in a population survey (Bebbington, submitted for publication).

Davis *et al.* (2001) showed that when people with psychosis were compared to evangelical Christians, while both had experience of voice hearing, only the latter felt positive about it. Peters *et al.* (1999) compared people in new religious movements to Christian controls and to in-patients with psychosis. All groups, including the religious ones, showed similar levels of conviction about their beliefs but the in patient group was also distressed. Van Os *et al.* (1999), and Hanssen *et al.* (2003) have found overlaps between the experiences of non-clinical and clinical populations, with the latter being more distressed.

The data show that unusual experiences and strongly held beliefs do not in themselves lead to symptoms, but that affective reactions and appraisals are also involved.

### Single symptom research

Richard Bentall has argued since the 1980s that schizophrenia is a "failed category", in that it does not

predict treatment or outcomes reliably. This argument has been widely accepted, in that single symptom research into hallucinations or delusions, and their dimensions of distress and conviction has been increasingly productive. Recently, genetic studies have also shown that the categories of schizophrenia and bipolar disorder do not segregate well (Craddock *et al.*, 2005; 2006), again bringing into question the usefulness of such diagnoses.

Another factor is the wide overlap of schizophrenia with a range of other emotional disorders. People with schizophrenia frequently have clinical levels of depression (Sands & Harrow, 1999) and low self esteem (Freeman *et al.*, 1998). Thirty percent fit the criteria for previous trauma (Mueser *et al.*, 1998; Read *et al.*, 2005). 20% have panic disorder (Turnball & Bebbington, 2001), 25% have evidence of OCD (Berman *et al.*, 1995), and up to 40% have dual diagnosis with substance abuse (Scott *et al.*, 1998), while 50% have comorbid personality disorder (Keown *et al.*, 2002; 2005).

These analyses are important not only in developing an understanding of psychosis, but also in informing treatment approaches; therapeutic ideas developed for these disorders can be adapted for those with the additional problems of symptoms of psychosis.

### The role of cognition

We already know that people with psychosis have problems with attention and memory, even before the initial episode (Joyce, 2005). However more recent research has also focussed on the role of reasoning biases. It is normal for all of us to hold with conviction ideas that are unsupported by evidence, eg. in ghosts, aliens, UFOs (unidentified flying objects), astrology and telepathy. Confirmatory bias is the norm; we are all less likely to examine alternative evidence for cherished ideas impartially or even at all.

In psychosis there is also some evidence for externalising biases (Bentall, 2003), although this may be partly related to grandiosity overlapping with paranoia (Jolley *et al.*, in press). There is also good evidence that people with delusions have a tendency to "jump to conclusions" (JTC), using less evidence when making a decision (Garety & Hemsley 1994). Other difficulties have been identified. Frith (1992; 2005) has found that people with psychosis have self monitoring problems and problems with forward modelling during conscious attention. In a series of elegant experiments, he has shown that abnormal processing in normal psychological mechanisms might account for a range of symptoms including audi-

tory hallucinations, delusions of passivity and delusions of control (Blakemore *et al.*, 2003). Johns and colleagues (2001) have confirmed difficulties in self monitoring in people with symptoms of psychosis. Poor use of contextual information appears to confer advantages in some tasks for people with schizophrenia, but may also disrupt the ability to process ongoing experiences and the “sense of self” (Hemsley 1998; 2005; Barch *et al.*, 2004). Kapur (2003) has discussed the mechanism whereby stress increases dopamine levels, and that this may increase the salience of stimuli, giving meaning to ambiguous or previously irrelevant aspects of the environment.

### Evidence for CBT for psychosis

Evidence for this new therapy has been gathered only since the 1990’s. Before that, there were a few case studies and uncontrolled trials. Unusually perhaps, most of the work so far has been based in the UK, although this is changing, and more recent randomised trials have also been localised in the USA and in Europe (Turkington *et al.*, 2006). The most recent meta-analyses of CBT combined with adequate antipsychotic medication, have summarised the available evidence so far (Pilling *et al.*, 2002; TARRIER & Wykes, 2004; Jones *et al.*, 2005; Zimmerman *et al.*, 2005). The last named evaluated 14 randomised controlled trials and included 1484 patients. The effect size for CBT for psychosis is reported to be 0.37 (TARRIER & Wykes, 2004; Zimmerman *et al.*, 2005). This is modest. The UK National Institute for Clinical Excellence (NICE) guidelines for schizophrenia, which were based on an update of Pilling *et al.* (2002), recommend CBT for psychosis for those with persistent symptoms. Longer treatments, more than 10 sessions over at least 6 months, have the best evidence base for those with ongoing symptoms despite adequate medication. There was no specific evidence for adverse outcomes although often these had not been monitored (Jones *et al.*, 2005). Evidence for CBT in early intervention services is beginning to emerge, but is not so established (Lewis *et al.*, 2002; Kuipers *et al.*, 2004; Craig *et al.*, 2004; Garety *et al.*, 2006). Intervention for prodromal groups is equivocal, but there is some evidence for CBT at least delaying onset even without medication, and with no adverse effects (Morrison *et al.*, 2004). For those with command hallucinations, Birchwood and colleagues have completed some careful studies showing that changing beliefs about voices can reduce distress (Trower *et al.*, 2004).

### Psychological Prevention of Relapse in Psychosis (PRP)

As part of a Wellcome funded programme grant, our group (Philippa Garety, Elizabeth Kuipers, David Fowler, Paul Bebbington, Graham Dunn and Daniel Freeman) have been able to test out some of the predictions from our model and to extend our understanding of specific dimensions of symptom types. This work has enabled us to improve our understanding and refine our therapeutic approaches. We have been able to test some of the pathways in our model (Garety *et al.*, 2001), and have established in particular, the role of emotion in psychosis, the centrality of appraisal, the separate role of reasoning biases and the effects of social and environmental adversity. We have also used Virtual Reality, in collaboration with Professor Mel Slater at UCL, to test out some of our ideas on non-clinical populations.

### Emotional processes

We have confirmed that appraisal is central to the experience of symptoms of psychosis, and is clearly related to distress. We have been able to show that positive symptoms such as hallucinations and delusions are associated with extreme negative evaluations of the self and others (Smith *et al.*, 2006; Fowler *et al.*, 2006a). This was also found by Barrowclough *et al.*, (2003) who separately tested the model and found that poor self esteem in patients related both to high levels of positive symptoms and criticism in their carers. Similarly, Kuipers *et al.* (2006b) found high criticism in carers related to anxiety and depression in patients who had recently relapsed. Krabbendam *et al.* (2005) have shown that depression contributes to the later development of delusions. Myin-Germeys *et al.* (2003; 2005) demonstrated that day-to-day fluctuations in symptoms of psychosis are associated with changes in negative affect; in other words that symptom levels are related to mood.

A further development in this area has involved illness appraisals. Health psychology has an established methodology for measuring illness appraisals in conditions such as kidney disease, or heart problems. It has been shown that illness perceptions affect wellbeing (Hagger & Orbell, 2003). This work has now been extended to psychosis, (Lobban *et al.*, 2004; 2006) and similar processes apply; negative appraisals of illness relate to distress, independently of symptom severity (Watson *et al.*, 2006). We have also found that appraisals of persecutory delusions as powerful and controlling are linked to patient depression (Green *et al.*, in press). Birchwood (2003), Close & Garety (1998) and Peters *et al.*, (2006) have all

reported that beliefs in the omnipotence of auditory hallucinations relate to distress. Appraisals of distress, and negative appraisals of the self and others, in turn relate to suicidal ideation, particularly in combination with high alcohol intake (Fialko *et al.*, 2006). Finally, Morrison (2001) found that safety behaviour, such as avoidance, described in models of anxiety and depression, also exist in psychosis. We have confirmed this (Freeman *et al.*, in press) and found further that safety behaviour in psychosis relates to delusional persistence.

### Reasoning biases

Our predictions about the separate contribution of reasoning biases in delusions has been confirmed. Fifty percent of a long-term, relapsing sample of people with psychosis (N=100) had a jumping to conclusions (JTC) reasoning bias. JTC appeared to contribute to delusional conviction, whereas affective pathways are related to delusional distress (Garety *et al.*, 2005). JTC has been found following recovery as well as in people with active delusions, suggesting that it might represent a trait vulnerability factor in psychosis (Peters & Garety 2005). Finally we found that JTC relates to belief inflexibility and to an inability to generate alternative explanations in those with delusions (Freeman *et al.*, 2004); JTC is part of a more rigid thinking style.

### Effects of stressful environments and trauma

We already know that some environments are associated with higher levels of psychosis. Pedersen & Mortensen (2001) found in a 1.9 million Danish cohort that living in an urban area was associated with a higher risk of schizophrenia. Boydell *et al.* (2001) found that social adversity increased the risk of psychosis for ethnic minority populations, particularly if they lived in more isolated environments. Separately, White (2000) has found that social isolation is associated with reduced insight in psychosis. We already know that people with schizophrenia have reduced social networks, that might contribute to these processes (Cresswell *et al.*, 1992). More generally cannabis smoking increases the risk of symptoms, particularly in those with genetic vulnerability to its effects (Arsenault *et al.*, 2002).

Severe early trauma and social adversity is frequent long before the onset of psychosis, particularly abuse and bullying (Krabbendam *et al.*, 2004; Bebbington *et al.*, 2004). We have found that such adverse events are associated with negative self and negative other schemas, and seem to have particular links with positive symptoms

such as hallucinations and persecutory delusions. Read *et al.* (2005) have long argued that trauma relates to symptoms of psychosis. In our experimental work, we have some evidence that trauma affects information processing, and leads to increased levels of intrusions, particularly in those with high schizotypy (Holmes & Steel, 2004). We have been able to confirm that there are links between the content of life events, particularly intrusive life events, and subsequent persecutory delusions and hallucinations in a first episode sample (Raune *et al.*, 2006).

### Virtual reality studies

We have also developed studies in a virtual reality environment. Participants are able to interact in real-time environments with avatars. The advantage of this methodology is that it is a controlled environment, but one where people are yet able to react emotionally to the avatars in the scenario. So far we have used a library scene and one on a moving underground train carriage. People “enter” these environments, move around in them and tell us what they think of the avatars they see. Reactions vary. While some people are positive (“they were friendly”), others are not (“they were telling me to go away”). These more negative reactions were predicted by high anxiety and by higher scores on paranoia questionnaires. We have conducted these studies on non-clinical participants (Freeman *et al.*, 2003; 2005), and on prodromal ones (Valmaggia *et al.*, submitted for publication). There have been no adverse reactions. This methodology has obvious potential to test out appraisals, reasoning styles and therapeutic interventions in other clinical populations.

### Clinical implications

The studies described so far have informed and refined our ideas about interventions in this patient group, which were originally shaped by our manual (Fowler *et al.*, 1995) and those of other similar groups in the UK (Chadwick *et al.*, 1996; Kingdon & Turkington, 2002; 2005).

### Engagement

An initial requirement for any interventions in this area, is that therapists must engage with clients and establish a workable therapeutic alliance. It is obvious that people with psychosis, particularly if they have paranoid symptoms, might be suspicious of therapists, and might perform poorly in all types of relationship. In our most recent therapy trial, we itemised the process of therapy,



and have found that engagement continues to be necessary even in later sessions (Rollinson, in preparation). This is in some contrast to other patient groups in which engagement is required in early sessions but can be assumed in later ones. We have found that therapists may need to continue work on these issues, particularly if more difficult areas are to be addressed.

It is also the case that poor memory, poor concentration, poor planning, cognitive distortions in session, and ongoing hallucinatory and other unusual experiences, are to be expected with this client group. The latter have to be checked for during sessions and discussed immediately if possible. Therapists also have to be flexible about sessions, both their timing and venue, as they may need to be cut short or rearranged. For clients with psychosis, it seems particularly important that therapists take responsibility for the session and how it is conducted, in a way that is still collaborative, but does not necessarily require clients to make so many decisions, or to take the lead. We know that ambiguity is more difficult to deal with in these conditions, and that misinterpretations are more common, so it is helpful for each session to be transparent, and for the therapist to explain what is planned, and why. It is also important to keep sessions non-aversive. Unlike in depression or anxiety, "hot" cognitions are not sought. Instead the therapist tries to maximise the client's cognitive capacity and to encourage cognitive flexibility; the emotional tone of sessions should be kept calm and empathic, while Socratic questioning is used to clarify issues. The aim is a joint formulation of difficulties so that interventions can be designed and tried out together.

### Treating hallucinations and persecutory delusions

Hallucinations in particular seem to be associated with low mood. Affect in general, as we have shown, interacts with positive symptoms and makes them more likely to start. Thus it can be very helpful to treat the affect directly; to interrupt low mood and cycles of anxiety by techniques like monitoring and enhancing coping responses, and introducing activity scheduling, as in depression. Finding out that affect and positive symptoms are linked can reduce clients' feelings of powerlessness and engender hope. Examining immediate ways to cope with symptoms such as distressing voices can also help to reduce pessimism, and encourage engagement with therapy. In the Psychological Intervention Clinic for out-patients with Psychosis (PICuP) in South London which Professor Elizabeth Kuipers runs with Dr Emmanuelle Peters, we have a large library of user-generated literature

on voices and delusional ideas; sharing this with clients can be particularly useful. Changing beliefs about voices, without necessarily trying to change the frequency of voices, is a useful aim of therapy, as it is usually the appraisal of voices that relates to distress. Re-appraising them as internally generated, in the same way that thoughts, memories and dreams are, can lead to their being perceived as less threatening and less omnipotent. If command hallucinations are a problem, exploring the consequences of disobeying them can be useful. The result is usually extreme anxiety, and fulfilling the command reduces this. Again, it is often useful to deal with the anxiety directly while evaluating the possible consequences of non-compliance.

### Dealing with distress

A key feature of the distress associated with positive symptoms of psychosis is the negative, even catastrophic appraisals that may be triggered; "I am going mad"; "I will never get better; "there is nothing that makes any difference- I am always going to be persecuted like this." Such conclusions create low mood, which then often exacerbates symptoms: Discussing how realistic they are, with reference to recovery models (Resnick *et al.*, 2005), while enhancing coping and dealing directly with feared consequences, is often the way forward. These techniques can also help to deal with the stigma and the social humiliation that often accompanies psychosis (Birchwood & Trower, 2006).

For many people with psychosis distress is related to negative schemas about the self and others: "I am always a victim"; "I am useless"; "the world is a dangerous place". In this context, doing schema work directly, as in depression, can be considered, together with re-evaluating the evidence for such views. It can be helpful to conduct a life review (Young, 1990). This can be made to emphasise the difficulties and challenges that have been met and coped with, and re-evaluates experiences as positive rather than purely negative (a survivor view point). Hall & Tarrier (2003) present evidence for an intervention focussed on improving self esteem, in a pilot study. Individuals generated evidence each week for 2 positive attributes about themselves, so that after 5 weeks they had built up the case for 10 such attributes. Patients were able to engage well in this, and it was reported to have improved their symptoms. Finally, given what we know now about family relationships and affect, reducing stressful relationships directly, and helping any carers to re-attribute difficult symptoms might also be indicated, in addition to problem solving and negotiating solutions (Kuipers *et al.*, 2002).

## Dealing with high conviction

We know that high conviction is related to cognitive inflexibility and an inability to generate alternative explanations for events; a more rigid thinking style. In these situations the aim is to work therapeutically on improving cognitive flexibility, by looking at evidence gathering styles, attributional biases and selective attention. Instead of their ingrained confirmatory biases, patients are encouraged instead to look at disconfirmatory styles: how many times did things go well? What other evidence was there in the room that you did not notice at the time? It is usually helpful to develop strategies whereby quite a lot of information is gathered before a decision is made. In order to do this, the therapist needs to work collaboratively with the patient in a “shall we find out, see what happens?” style, whereby both look at evidence impartially, and both might find out something new. At this stage, dropping safety behaviour gradually might be possible, so that avoidance is reduced and replaced by a careful testing out of new experiences. More dramatic techniques, such as the flooding used for other anxiety disorders, are not recommended for this client group because of the link between affect and possible worsening of positive symptoms.

While reality testing is useful, it is not always possible; some delusional ideas cannot be tried out. However, testing aspects such as “Does everyone hear your thoughts?” or “are your voices obvious to all passersby?” might be amenable to some experimentation. If this is attempted, it is important for the patient to make a clear prediction beforehand of the result. “If we try to audiotape your voices what will it mean if the tape is blank? Will it mean that you are mad, that the tape wasn’t working properly or that voices, even though they sound external are somehow generated internally and cannot be heard by others?” Reality testing is only a sensible option if the last explanation is a possibility *and* would make the person feel better.

Conviction is not as easy to change as distress, and needs careful thought about the best route for a given patient. It may not be possible to reduce conviction. However, as we have seen, if it is not distressing, it may not be crucial to reduce it. Sometimes the thought experiment can be helpful per se, and can encourage some flexibility. “Even though I don’t think this: that these are my worries, and that my neighbour is not involved, if I could think it, I would feel better”.

Grandiosity is often associated with high conviction and low distress. It relates to self esteem, in our view directly. In other words, the unusual ideas bolster low self

esteem in a virtuous circle, (Smith *et al.*, 2005), rather than compensating for low self esteem (Bentall & Thompson, 1990). Because of this, it can be harder to deal with, and may take more sessions. It is generally useful to try to build up a version of the current self that is “good enough” without grandiose ideas, before attempting to dismantle the grandiosity. However, in long term groups, the people who have been grandiose for many years may really not have any other sources of self esteem. Thus replacing the edifice they have built up has to be done carefully and in a way that can be maintained after therapy ends. There are as yet no clinical trials on grandiosity, and these reflections relate to clinical experience.

## CONCLUSION

Cognitive behaviour therapy for psychosis is still at an early stage, and the evidence for its efficacy is still progressing. However, it is interesting how work in this area has enabled change in what was considerable therapeutic pessimism. It has provided therapists with a structure within which they can engage with clients with psychosis, and which allows discussion of distressing symptoms that often could not be talked about before. The evidence so far is that it does not make things worse, even though this was initially predicted from the fact that increasing insight in psychosis can increase depression. However, these approaches enable therapists to deal with insight while maintaining hope (Turkington *et al.*, 2002). The recovery model has been useful here (eg Borkin *et al.*, 2000; NIMHE, 2004; Resnick *et al.*, 2005). However much work clearly remains to be done in increasing our understanding of the cognitive, emotional and social processes involved, and in improving our treatment approaches.

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