Cognitive-Behavioral Therapy of Delusions: Mental Imagery within a Goal-Directed Framework

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Central to psychotic disorders, delusions are associated with disability and often respond inadequately to pharmacotherapy. Cognitive-behavioral treatments have been developed over the last 20 years that successfully address delusions. However, meta-analyses suggest only a modest improvement in psychotic symptoms. Because delusions share considerable overlap with anxiety, adapting principles and techniques that have demonstrated efficacy in the treatment of anxiety disorders might improve the impact of cognitive-behavioral treatment of delusions. We report a case illustrating a cognitive-behavioral approach to delusions with an emphasis on mental imagery techniques. A 25-year-old male diagnosed with paranoid schizophrenia whose clinical presentation was dominated by paranoid delusions received 6 months of treatment. At the end of the follow-up period, the patient's delusions were minimal and his negative symptoms had significantly improved. Mental imagery may be an important treatment tool for delusions. © 2009 Wiley Periodicals, Inc. J Clin Psychol: In Session 65:791–802, 2009.

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Delusions are defining features of psychotic disorders such as schizophrenia and schizoaffective disorder. Epidemiological research indicates that 90% of individuals diagnosed with a psychotic disorder will experience delusions at some point (Cutting, 2003). Delusions are associated with considerable distress and can contribute to psychiatric hospitalization and long-term disability.

Since the early 1960s, it has been demonstrated repeatedly that antipsychotic medications reduce delusions (Miller, McEvoy, Jeste, & Marder, 2006), although as many as 35%–50% of individuals with schizophrenia experience delusions that are

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refractory to pharmacotherapy (Barnes, Buckley, & Schulz, 2003). A further limitation of antipsychotic medication for delusions is that the drugs change the perceived salience of delusions (Kapur, 2003) while leaving the cognitive structures that maintain delusions intact, a vulnerability factor for future relapse (Mizrahi, Bagby, Zipursky, & Kapur, 2005).

Given the limitations of antipsychotic medications, psychosocial treatment is indicated. Cognitive-behavioral therapists began working with delusions in the late 1980s, and several treatment manuals now include treatment for delusions (Chadwick, Birchwood, & Trower, 1996; Fowler, Garety, & Kuipers, 1995; Kingdon & Turkington, 2005). The common formulation of these approaches is to see delusions as maladaptive beliefs developed from non-psychotic antecedent factors. Therapy comprises assessing the impact of the delusions on the patient's everyday behavior and collaboratively helping the patient modify the beliefs both by directly testing them and by modifying associated premorbid beliefs (e.g., "I am a worthless") that may be driving the psychotic symptoms (Beck, Rector, Stolar, & Grant, 2009). Although cognitive therapy has shown promise, a recent quantitative review (Zimmermann, Favrod, Trieu, & Pomini, 2005) estimated a modest effect size of .50 for the treatment of hallucinations and delusions in outpatients with schizophrenia, suggesting considerable room for treatment advances.

Anxiety has been repeatedly found to be prevalent in schizophrenia (Steer, Kumar, Pinninti, & Beck, 2003) and a better predictor of poor quality of life than depression (Huppert & Smith, 2001). As many as 60% of patients with schizophrenia suffer a comorbid anxiety disorder, with panic and social anxiety being linked specifically to paranoia and suspiciousness (Huppert & Smith, 2005). Because anxiety disorders and persecutory delusions share anticipation of danger as a core feature, it has been proposed that similar psychological processes might underlie both types of symptoms (Garety, Kuipers, Fowler, Freeman, & Bebbington, 2001).

Mental images are one such psychological process implicated in the development and maintenance of anxiety. Mental imagery refers to perceptual information that is brought to mind from memory and imagination rather than arising from activation of the sense organs (Kosslyn, 1980). Recent research has articulated specific relationships between particular anxiety disorders and types of images (Hirsch & Holmes, 2007). Patients with social phobia, for example, see themselves as performing poorly in social situations, patients with generalized anxiety see brief images of their worst fears, and patients with post-traumatic stress experience images of the traumatic event. Because negative images stir up more affect than verbalizations of the same content, patients tend to find the images particularly distressing, making the images central players in the psychopathology of anxiety.

Accordingly, mental imagery has been employed to neutralize anxiety with considerable success (Holmes, Arntz, & Smucker, 2007). Some imagery techniques, such as imaginal exposure, entail a more-or-less passive re-experiencing of the distressing image to promote habituation to its unpleasantness. Other techniques, such as imagery rescripting, entail changing the image to one that is less disruptive to daily functioning.

One team of researchers (Morrison et al., 2001) found that images occur frequently in psychosis (74%) and, importantly, are associated with paranoid delusions, feared catastrophe, and past abuse. Following up on this result, Morrison (2004) describes a case study in which imagery successfully treated a delusion associated with a traumatic event: rescripting techniques (e.g., modifying the end of

the image, introducing humor) were employed to change the emotional quality of the image and to promote a sense of control.

Analogous to the anxiety literature, we propose that imagery techniques have a broader application for delusions than trauma. For example, given the relation of paranoia to panic and social phobia, a focus upon the self in dangerous situations might prove fruitful for improving the efficacy of cognitive-behavioral treatments for delusions. Additionally, we have found that targeting negative symptoms and poor functioning early in therapy can aid the ultimate goal of helping the patient overcome delusional ideation. In this article, we present a case of successful cognitive therapy in which imagery was utilized within a goal-directed framework.

Case Illustration

Presenting Problem/Client Description

Jean-Paul (JP) is a 25-year-old Caucasian man with a diagnosis of paranoid schizophrenia. Having developed social phobia in middle school and major depression in college, JP was now on medical leave from graduate school after being hospitalized for his first psychotic episode. JP had been experiencing psychotic symptoms for approximately 1 year. Prior to graduate training, JP had a stellar academic record; however, JP's grades began to plummet in graduate school, which served to further decrease his self-esteem and aggravate his depression. He became more isolated from his already limited social network. He began to feel increasingly depersonalized and scared, like he "was going crazy." JP noticed people were looking at him funny, and had a "feeling" that something bad was about to happen. He thought that someone was after him and soon began to feel that it must be the devil.

A few months later, JP developed an elaborate delusion about campus officials being CIA agents. He thought they were tapping his computer and observing him through the windows. He was sure they were gathering at the local campus coffee shop to talk about him. He avoided all buildings near the coffee shop, and eventually dropped out of a class located near the coffee shop.

At the outset of therapy, Jean-Paul was living with his parents, spending his days "doing nothing" and watching a lot of television. He reported strained relations with his family and a general feeling of "numbness." He ultimately wanted to return to graduate school but wasn't sure this was an option for him anymore. JP was adherent to his prescription of risperidone (3 mg qhs) and sertraline (150 qam). His medications were not changed over the course of psychosocial treatment, nor was he receiving other treatment or concurrent case management. There was no history of substance abuse, violence, or suicide attempts.

Assessment and Case Formulation

Prior to the onset of treatment, JP was assessed via structured clinical interview that included validated measures of symptoms, functioning and neurocognitive performance. The patient's mother provided collateral information that contributed to clinician ratings. A panel of experts determined JP's diagnosis to be schizophrenia, paranoid type, rather than an affective psychosis. The patient was reassessed with the same measures at the end of treatment (6 months after his intake) and 1 year after his baseline assessment (follow-up).

Table 1 presents JP's pretreatment assessment findings. His scores on the Psychotic Symptom Rating Scales (PSYRATS; Haddock, McCarron, Tarrier, & Faragher, 1999) reflect considerable psychotic disturbance. Although JP did not report auditory hallucinations, he held several delusional beliefs. Specifically, he believed that the devil was out to get him, and that many of his fellow students and colleagues were CIA agents meeting about him in secret. JP's conviction was 100%, and he experienced the beliefs as both persistent and pervasive, leading to considerable distress. As is often the case with patients suffering from schizophrenia, positive symptoms are associated with significant negative and affective symptoms. In JP's case, while affective flattening and alogia (i.e. reduced verbal expressivity) were minimal, he showed significant withdrawal from constructive activity, indexed by elevated scores on both the Avolition-Apathy and Anhedonia-Asociality subscales of Scale for the Assessment of Negative Symptoms (SANS; Andreasen, 1984).

During his long hours of inactivity, JP experienced acute affective distress, as can be seen in his severe level of depressive symptoms, self-reported on the Beck Depression Inventory II, and moderate level of anxiety, self-reported on the Beck Anxiety Inventory. JP's neurocognitive functioning was assessed via a computerized battery that has been validated in patients and controls (Gur et al., 2001a,b) and taps domains such as mental flexibility, verbal memory, and attention. JP scored in the normal range on all of the neurocognitive tests.

JP's mother reported that she had been previously diagnosed with anxiety and depression, and that there was no psychosis on either side of the family. She described JP as a quiet boy with few friends. She reported a tense relationship with JP's father that, at times, resulted in fights during JP's youth. JP remembers hiding in his room when they yelled at each other. JP reported a strained relationship with his parents and brother. His father was often absent as he traveled a lot for his work. His mother was a homemaker who was withdrawn, depressed, and often sleeping. JP spent much of his childhood playing alone. JP recalls being frightened of his brother, who would often torment him.

Table 1
JP's Symptom Scores at Pretreatment, Post-Treatment, and 12-Month Follow-Up

	Baseline	End of treatment (6 months)	Follow-up (12 months)
Delusions	17	14	0
Hallucinations	0	0	0
Negative symptoms			
Affective flattening	0	0	0
Alogia	2	2	0
Avolition-apathy	11	7	3
Anhedonia-asociality	13	14	10
Depression	42	40	40
Anxiety	21	22	29

Note. Delusions = subscale total score, Psychotic Symptom Rating Scales (0–24); Hallucinations = subscale total score, Psychotic Symptom Ratings Scales (0–44); Affective Flattening = subscale total score, Scale for the Assessment of Negative Symptoms (0–30); Alogia = subscale total score, Scale for the Assessment of Negative Symptoms (0–20); Avolition-Apathy = subscale total score, Scale for the Assessment of Negative Symptoms (0–15); Anhedonia-Asociality = subscale total score, Scale for the Assessment of Negative Symptoms (0–20); Depression = total score, Beck Depression Inventory II (0–63); Anxiety = total score, Beck Anxiety Inventory (0–63).

Figure 1 contains a case conceptualization that brings together several of the influencing factors that were revealed in the assessment and therapy sessions. Each of the situations at the bottom of the figure illustrate the manner in which dysfunctional thinking patterns lead the patient to experience distress and to compromise his functioning. In situation ♯1, he misinterprets other people as being members of the CIA and elects not to go to class as a result. Non-attendance contributed to his poor academic performance. Likewise, situation ♯3 illustrates how interpersonal discomfort gives way to persecutory beliefs that, in turn, drive JP away from other people. In each case, the behavior in response to the delusion serves to maintain it. Situation ♯2 shows how the patient's low self-regard likely leads him to give up trying to socialize, adding to his isolation.

Course of Treatment

JP attended a total of 38 individual cognitive-behavioral therapy sessions. The therapy sessions initially focused upon JP's negative symptoms. The therapist and patient collaboratively set a list of goals JP hoped to achieve. This collaboration and

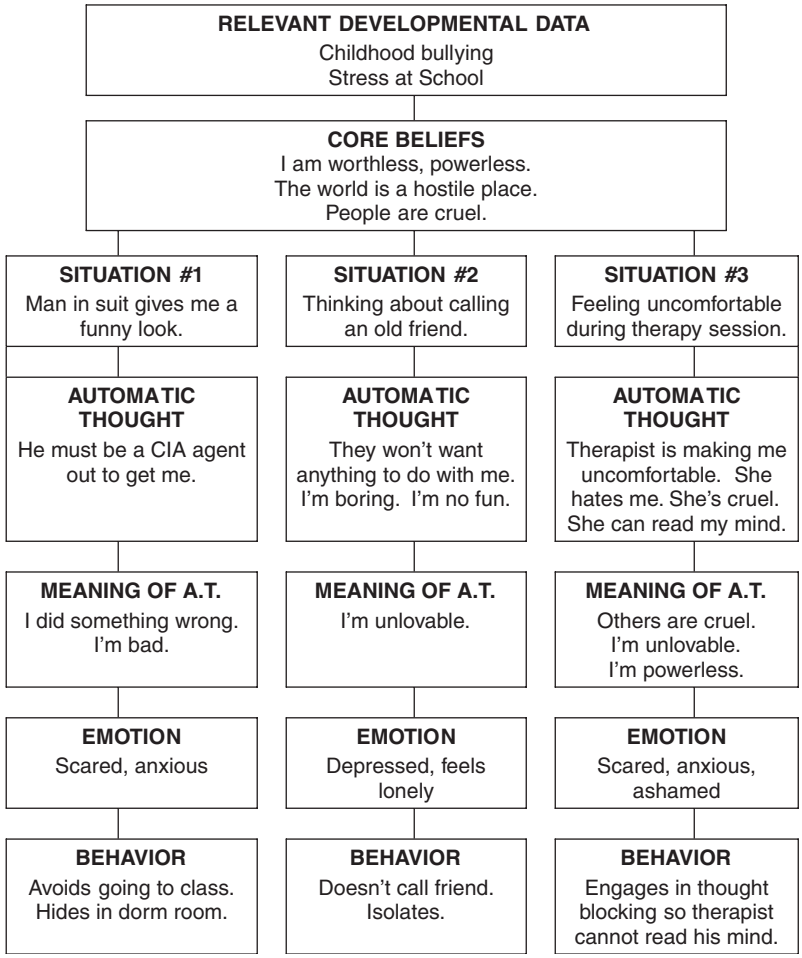

Figure 1. JP case conceptualization.

early progress increased JP's engagement. Early sessions were also used by the therapist to develop an understanding of JP's delusions. The middle sessions were dominated by traditional cognitive therapy techniques aimed at helping JP test his delusional ideas, such as looking at evidence for and against his belief and considering the pros and cons of maintaining his belief. Once the delusions were significantly weakened and JP was much more active in his everyday life, imagery exercises were introduced to help him gain a better sense of control over his delusions and to buffer himself against possible relapse of psychosis in the face of stress when he returned to school.

Treatment initially focused on the belief that the devil was going to get JP. The therapist explored JP's evidence for believing in the "devil." She attempted to understand the nature of JP's relationship with the devil and what it would mean to JP if the devil suddenly disappeared from his life. JP thought the devil was omnipotent, malevolent, capable of reading JP's mind, inserting thoughts into his head, and was waiting for the perfect time to get him. JP's evidence that the devil was putting thoughts in his head was that he experienced thoughts that did not feel like his own. He also reported that sometimes a number would pop into his head, which he construed as a message from the devil. The therapist educated JP about the nature of intrusive thoughts and worked to normalize his experience. The therapist noted that JP's "alien thoughts" sounded quite similar to obsessive compulsive disorder, where people also experience distressing thoughts and images that are not their own. JP gradually realized that intrusive and alien thoughts did not necessarily come from the devil.

JP's relationship with the devil was the next therapeutic target. Although the devil frightened him, JP felt special that he had been chosen for this relationship. If the devil were to suddenly disappear, JP reported that he would feel a mixture of relief and loneliness. In response, the psychotherapist set out to increase JP's self-esteem and social network, so as to lessen the need for connection with the devil. This was partly accomplished by encouraging JP to get a job, socialize more, and assert his voice during family meetings.

Each week the therapist would have JP rate his conviction in the devil and noticed that its waxing and waning course was often related to the stressors in JP's life. JP was educated about the connection between stress and psychosis. Having JP observe the relationship between his own stress and his persecutory beliefs regarding the devil lead to a new belief—JP began to understand the "devil" as a product of his stressed brain. JP's thoughts about the devil gradually faded away. During certain sessions he was able to say it was "ridiculous" and he felt badly that he had wasted his time on something so "stupid."

JP next examined the belief that CIA agents were spying on him. Some of JP's evidence included: "a man looked at me funny," "a car sped away quickly when I noticed it," and "there are a lot of men in suits at the coffee shop." The therapist encouraged JP to consider other possible explanations for these events. For example, for "a man looked at me funny," the therapist suggested that perhaps JP was first staring at the man, which made the man uncomfortable and give JP a "funny look." Exercises such as these were designed to promote use of mental flexibility, evident in JP's strong performance on content-neutral neurocogntive tasks, when his paranoid thinking cropped up.

The logic of the CIA agents meeting about him was also explored:

- Therapist (T): What have you done wrong that so many CIA agents are meeting about you?
- JP: I don't know.

- T: It must have been something pretty bad, right?
- JP: Yeah.
- T: Isn't it a bit strange that it was so bad and you don't remember it?
- JP: I guess so.
- T: Maybe you killed someone?
- JP: No (chuckling).
- T: Are you sure you didn't?
- JP nods smiling, aware that this is somewhat absurd.

The exercise of examining evidence for and against his belief helped JP to lessen his conviction. "I have a feeling it's real" is one of the main pieces of evidence supporting his belief in both the devil and the CIA agents. The therapist employed psychoeducation by introducing two ways humans come to "know" things: careful reasoning and gut feeling. Reasoning and logic typically produce the most accurate results but require time and effort. Gut feeling, on the other hand, relies on more primitive brain structures and is helpful if one is in imminent danger, like having to escape from a nearby bear. However, relying on a "gut feeling" is less accurate and often involves jumping to conclusions. Many sessions were spent on the pros and cons of using one's "gut" versus "reason."

JP and his therapist also explored themes of worthlessness, helplessness, and feeling like he was "bad." As a young boy, JP had many experiences of being bullied by his brother and his brother's best friend. One significant childhood memory was being locked in a coffin they found in the woods and being left there for hours. JP's parents were unavailable and unaware that JP was being bullied in his own home. JP explored in session the line of thinking that he must have been bad for his parents to let his brother and friend abuse him—"Why else would they let it happen?" The therapist employed a variety of techniques, including self disclosure of her own experience being bullied, to help JP conceptualize the memory of being abused as not having to do with his own worth as a person.

JP gradually grew stronger relative to his paranoia and his conviction in the "devil" and the "CIA agents" diminished over time. Ultimately, he was looking forward to returning to graduate school, but he was fearful that his paranoid beliefs would return. It was at this point in the therapy that psychosis was unexpectedly triggered during a role-play.

Working with psychosis in session. After being invited to partake in a role-play, JP was initially hesitant but agreed. After a minute, JP began to smile nervously and appear withdrawn. JP revealed he was experiencing psychotic symptoms—he thought his therapist could read his mind and had malicious intentions. Interestingly, at the start of the session, the therapist and JP had discussed a pattern of JP's psychosis. When JP felt discomfort, he often thought an external person or thing was making him uncomfortable, and that person or thing must be evil.

- T: What's it like to share with me that I can read your mind?
- JP: I feel stupid.
- T: Why?
- JP: Because you already know what I'm about to say.
- T: Oh… so you think I already know the answers to the questions I'm asking you and I'm just asking you out of spite or for a joke?
- JP: Yes.

- T: Why would I do that?
- JP: I'm not sure.
- T: Doesn't it seem a bit out of character? I mean, usually, I'm pretty nice, right?
- JP: Yeah, it doesn't make sense.
- T: Maybe it's possible that the role-play made you feel uncomfortable; when you felt discomfort, you thought something or somebody must be causing this and then thought it must be me and I must have an evil intent.

JP nodded in agreement and thought this was a strong possibility. The therapist encouraged JP to view this episode as an opportunity to work together to overcome psychotic experiences. JP was on board with this plan. Using a variety of techniques, such as reasoning to test out the beliefs and humor to soften the tone, the therapist guided JP back to the view that his therapist was a nice person trained to help people, and not dangerous. The therapist also emphasized the connection between stress and delusions and helped JP gain a sense of efficacy by confronting and coping with a distressing psychotic episode.

At the end of the session, the paranoid beliefs were still present but much lessened (his conviction in their truth was low). JP responded well to addressing active psychotic thinking in session. It was at this point in treatment that imagery was introduced to give JP a chance to perform similar exercises on psychotic thinking that might be triggered by his return to school.

Mental imagery. JP was motivated to improve and return to school. Although he was initially reluctant to engage in the imagery exercises, he agreed it was better to experience delusions in the safety of a therapist's office, instead of at school where he was alone and vulnerable. A total of six guided imagery exercises took place. Prior to each, images and details were gathered and then utilized to paint a more realistic picture. Ground rules were set to stop the exercise if JP became too uncomfortable. The guided imagery exercises were collaborative, with both the therapist and JP creating the images.

The first imagery session was along the lines of a traditional exposure. JP was to imagine the devil getting him without engaging in evasive behavior. JP imagined himself at his community college. He saw himself wearing jeans and a sweater and said it was cold outside. He pictured himself in his room, alone, and scared. The therapist had JP leave his room. JP saw himself walking towards the engineering building. The therapist asked JP to imagine seeing people along the way. JP described people staring at him and thinking, "There's that guy they're after." JP said the agents were meeting about him at the coffee shop. The therapist wondered if he could imagine walking toward the coffee shop. "No," said JP—it was too scary.

JP pictured himself in the engineering building. He began to feel that the devil was coming for him and felt frightened. He went to sit alone in a more isolated area. JP rated his anxiety as 8 on a scale of 1 to 10. The therapist then asked JP to visualize the devil "getting him." JP described the devil entering him and paralyzing him. He described himself sitting and staring as if he were dead. He reported that people were looking at him and the bystanders were saying things that JP feared: "There's that guy," "He's crazy," "He's weird," "He's bad."

JP was smiling when he opened his eyes. He was surprised he had been as scared as he was, given he no longer believed in the "devil." His fear came down as the imagery exercises progressed, falling to a score of 4 out of 10. He said the exercise was helpful and reported feeling that he was ready to visit the coffee shop.

Prior to the next imagery exercise, the therapist had JP speculate what would happen when he arrived at the coffee shop. JP thought the CIA agents would push him around and possibly beat him up. Next, JP again imagined himself at his graduate school. He was feeling scared. He described approaching the coffee shop by walking along a dark alley lined with trees. JP wanted to turn back, and he rated his fear as marked (7 out of 10). JP continued toward the coffee shop. However, within this guided imagery, JP was surprised to find that the agents just stared at him. One of the agents was talking about him. He began to feel "panicky" and wanted to run outside the meeting. The therapist encouraged JP stay in the coffee shop. While there, JP practiced thinking about how strange it was that these people were spending so much time meeting about JP—didn't they have real criminals to spend their time on? JP remained in the coffee shop for 5–10 minutes, his anxiety rising and then falling as a function of time. He rated his peak level of fear and discomfort as 8/10. However, during the last few minutes of standing in the coffee shop, his fear began to subside. JP was disappointed that he was able to imagine the coffee shop so vividly. He said he felt his conviction in the delusion returning during the visualization. He had hoped he would not have believed in the CIA agents meeting about him at this point.

JP felt somewhat mixed about the session. Even though he found the visualization helpful in confronting and reducing his fears, he thought the visualization made him believe in the CIA gatherings more. The therapist proposed the notion that this made the imagery sessions good practice for returning to school, as JP could learn alternative ways of thinking and behaving when his stress level was higher at school. With these new skills, JP would effectively handle the paranoid thinking in different way, allowing him to remain in school and live productively.

JP agreed to additional exposures in subsequent sessions. These involved further guided imagery with the "devil" and the "CIA." JP saw that he could cope with the anxiety and, at the same time, start to question the validity of his beliefs. Toward the end, the imagery sessions were reverse role-played, with JP playing the reality-testing therapist and the therapist playing JP, the goal being to drive home the skills by having JP explicitly articulate them. The imagery exercises were discontinued when JP felt he had mastered his fears. Indeed, JP planned on visiting the school coffee shop with his parents upon returning to school.

Outcome and Prognosis

Table 1 summarizes JP's post-treatment and follow-up assessment results. During the sessions, it appeared that the imagery exercises had helped JP to develop a sense of control over his delusions. This impression was borne out in the ratings made by an assessor blind to treatment. Delusions, which were elevated at the start of treatment, fell to zero, indicating that treatment had neutralized JP's paranoia. It is notable that this reduction is seen at the follow-up assessment, a result consistent with other reports on cognitive-behavioral therapy for psychosis (e.g., Sensky et al., 2000), suggesting a post-treatment consolidation of gains. Negative symptoms also responded to treatment. The pattern of scores reflected well JP's initiation of part-time employment and spending more of his day engaged in constructive activity (Avolition-Apathy dropped to minimal levels), while still participating in limited socializing (Anhedonia-Asociality is still elevated). Affective symptoms did not change as the result of treatment.

At the end of treatment, the patient was ready to return to graduate school. Therapy engendered new thinking patterns that resulted in the patient giving up his paranoid delusions, which had posed serious obstacles to his daily functioning and long-term goals. Over the course of cognitive-behavioral therapy, JP developed cognitive and behavioral strategies that could buffer against a return of his psychosis. Although his affective symptoms continue to be distressing, they do not impair his functioning. It might be predicted that as he begins to succeed at school and socializes more, these symptoms will be reduced into the mild range.

Clinical Issues and Summary

This case illustrates how a two-pronged approach can successfully treat delusions, leading the patient to develop more meaningful engagement in daily activity. The first prong is to target negative symptoms directly by having the patient set goals and work towards them. As the patient becomes more active, in this case volunteering and getting a part-time job, he experiences the self-reinforcement of completing tasks he set out for himself, and he has less time to dwell on his psychotic symptoms. In other words, JP gained ground on his delusions, feeling more in control of his life. As the significance of the paranoia begins to be weakened by goal-attainment, the second prong, direct modification of the delusion, becomes key. Through analyzing evidence, considering alternatives, and other cognitive therapy techniques, the patient begins to give up conviction in the truth of his delusion. However, he is left with a lingering fear of the return of psychosis when he returns to stressful situations. It is at this point that imagery provided a powerful means to enhance the patient's skills and help him realize his capacity to deal with stress back at school.

The imagery may have helped the patient for several reasons. Previous research has shown that imagery elicits stronger affect than verbalizations (Holmes et al., 2007); thus, imagery can habituate anxiety to a tolerable level. Second, once the anxiety has come down, getting the patient to practice coping and testing alternatives to his delusion become expeditious means to practice the skills and to re-script distressing spontaneous images into more palatable images. The presence of a supportive other (the therapist) and the use of humor assisted the patient in confronting his frightening images.

This case study also highlights another potential therapeutic tool: triggering psychosis within a therapy session. This has been previously discussed as an important way of addressing auditory hallucinations (Chadwick et al., 1996): the therapist shows the patient how to turn hallucinations on and off in session, thus giving the patient a sense of control. There has been less discussion of employing this strategy with delusions. And, as the present case study shows, triggering delusions in session had tremendous therapeutic benefit. The patient, with the help of the therapist, tested his delusional ideas, confronted his fears, and ultimately reduced the psychosis in session. Such experiential learning is, perhaps, the best means for helping patients learn skills and develop healthy attitudes that promote a better quality of life. In short, our clinical experiences suggest that mental imagery shows considerable promise for promoting therapeutic change of delusions.

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