

Is it reasonable to consider delusions as mainly a thought disorder?

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Abstract

This review reflects on the question whether delusions are predominantly a thought disorder, characterized by defective cognitive processes. As background, a general model describing the aetiology of delusions is presented. Research in the positivist epistemology, especially the cognitive approach, focuses on defects in reasoning processes, but increasingly recognizes the relevance of emotions, and attempts to integrate them into explanatory models. First person accounts point to the high level of emotionality in delusional experiences. It will be argued that emotions exert an influence in multiple and pervasive ways. Theory and evidence regarding direct reflection of emotions in delusional content and for delusions as defence against unwanted feelings is considered. Research in the interactionist tradition suggests that delusions can develop in response to severe affective disturbances, for example through traumatising experiences, and that adverse social factors contribute to development and maintenance of delusions via their impact on feelings about self and others. A social account of delusions explains delusions as a relational problem, characterized by disturbed affective relations to others. Considering the pervasive presence of emotions in the development and maintenance of delusions, this leads to the conclusion that it would be too narrow to understand delusions as a purely cognitive disorder.

Background

The current inquiry attempts to answer the question “Is it reasonable to consider delusions as mainly a thought disorder?” Delusions are generally understood as ‘unusual beliefs’ that people hold with conviction, despite contradicting evidence and others not sharing their beliefs (BPS 2000). There is increasing insight into the relevance of delusional content, a departure from the traditional view based on Karl Jasper’s distinction between bizarre and essentially meaningless delusions in non-affective disorders (psychoses) and false, but understandable beliefs in emotional disorders (neuroses) (Freeman & Garety, 2003). Consequently, delusions are subcategorized according to content, for example grandiose delusions (belief in special abilities), delusions of reference (believing to be the addressee of signs) and paranoid delusions (belief to be threatened by persecutors). Recent quantitative research findings emphasize the broad prevalence of delusional thought, for example paranoia, in the general population, suggesting a continuum of delusional ideation ranging from mild to severe, rather than present or absent (Freeman et al., 2005).

Research into delusions is conducted in both positivist and interactionist epistemologies, with positivist approaches focusing on building general theories based on quantitative analysis of empirical observations as in the natural sciences, and interactionist or hermeneutic perspectives aiming to understand individual experiences of delusions in the context of social interaction. Roberts (1992) suggested an integrationist 3-phase theoretical model to structure the various approaches attempting to explain development and maintenance of delusions. In this model, Phase I denoted the pre-psychotic phase, where ‘pre-disposing factors’ (individual dispositions) may have created specific vulnerabilities. Further ‘precipitating factors’ (adverse experiences) that threaten psychological integrity and represent an intense affective disturbance for the individual, like loss of control, isolation or humiliation, may then trigger Phase II, onset of acute

psychosis. This phase begins with a 'prodromal stage' characterized by an affective state called the 'delusional mood', a frightening experience of alienation from the world. The next stage consists in the formation of simple delusions which attribute meaning to strange experiences. The delusional explanation provides relief from anxiousness related to the delusional mood, which may explain why it is adopted with conviction. In Phase III, the chronic delusional state, simple initial delusions are further elaborated into a complex belief system, which seems to be resistant to change due to the psychological benefits it conveys.

Roberts pointed to the rise in cognitive approaches to studying delusions and the increasing use of empirical evidence for theory building in this area, as compared to psychodynamic approaches with extensive theorizing, but difficulty to provide objective evidence. He saw cognitive approaches as narrowing the ontological focus on the question of initial delusion formation (Phase II of his model), with less interest in the specifics of the pre-psychotic phase or those of the chronic delusional state with its elaborated delusional belief systems. Garety and Freeman (1999) undertook a review of cognitive approaches to the study of delusions. They pointed to Maher's important contribution in explaining delusions as rational responses to anomalous experiences (1974, 1988; as cited in Garety & Freeman, 1999). But by assuming essentially normal reasoning during belief formation, Maher's account was not able to explain delusions developing without anomalous experiences. Furthermore, it could not explain the evidence for deficits in cognitive processes of persons with delusions.

Garety and Freeman considered three broad strands of theorizing about cognitive biases: Theory of Mind (ToM) deficits (a diminished ability to understand other people's beliefs and intentions), reasoning and data gathering biases, and attributional biases pointing to possible motivational and affective factors in the development of delusions. They found some evidence for ToM deficits in deluded persons but considered these to be related to a more general reasoning deficit. The evidence for a data gathering bias implying a tendency to jump to conclusions was stronger, but empirical support for motivational factors was weak and inconclusive.

With the intention of clarifying the possible contribution of motivational factors to the development specifically of persecutory delusions, McKay, Langdon and Coltheart (2007) made a general distinction between 'deficit' and 'motivational' accounts of delusion formation. Deficit explanations referred to disturbed reasoning processes, while motivational explanations were rooted in the psychodynamic tradition and explained delusions as a defence against unwanted feelings about the self. Applying a new methodology, the Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998; as cited in McKay, Langdon and Coltheart, 2007), the researchers found evidence for discrepancies between overt and covert self-esteem in deluded patients, supporting the predictions of the defence account and in line with psychodynamic theorizing. They also found evidence for an association between persecutory delusions and increased 'need for closure', a motivational construct denoting a preference for certainty and predictability, which may account for an increased tendency in deluded persons to try and explain their anomalous experiences. These findings were interpreted as strong evidence in support of the relevance of motivational aspects in the formation of persecutory delusions, suggesting a need to integrate motivational aspects into cognitive accounts.

The motivational account thus points to a possibly important role of emotions in delusion formation, an implication of the idea that delusions serve to protect the individual from unwanted feelings about the self. Roberts (1992) earlier cited phase model outlined how emotions may play a role in the general aetiology of delusions: Psychosocial factors with a potential to trigger the onset of psychosis by causing intense affective disturbance, feelings of intense anxiety which characterize the delusional mood phase, but also the reinforcing impact of the relief associated

with having found the (delusional) explanation, which is preferred to not understanding what is going on.

In their qualitative analysis of 29 published first-person accounts of delusions, Stanton and David (2000) found many references to anxiety experienced at onset in the delusional mood, but they did not explore emotional aspects in depth. Mental Healthcare (2010) pointed to the impact of emotions on the ways in which events and other people's behaviour is interpreted, thus contributing to the formation of delusions. They also mentioned potential trigger factors with high emotionality like a traumatic event or bereavement, which may cause anomalous experiences prompting the need for explanation. Thus there are many indicators for a pervasive influence of emotions in the development and maintenance of delusions, which inspired the current review and its aim to question a purely cognitive account of delusions.

Evaluation of evidence and literature

First person accounts give a vivid impression of the high level of emotionality involved in delusional experiences. For example, Michael Crawford (2007) reported how pervasive feelings of anxiety preceded the appearance of delusional explanations. But emotionality in delusions is not restricted to negative feelings, and it may change in tone over the course of a psychotic episode, as is illustrated by the account of Aaron Reina (2010). Reina initially believed to have special powers and to be intensely admired by other people. He then developed persecutory ideas about being followed by agents sent out to protect him due to his enormous value to society. This changed to feelings of guilt because he decided not to take on the responsibility to save the world, later leading to great fears to be murdered by his persecutors in revenge for the denial.

Researchers from the cognitive perspective increasingly recognized the role of emotions as a contributing factor to psychotic symptoms and set out to develop multi-factorial models (see for example Garety, Kuipers, Fowler, Freeman, & Bebbington, 2001; Freeman, Garety, Kuipers, Fowler, & Bebbington, 2002). These theorists distinguished between the 'defence' account, where delusions serve to protect self-esteem from unwanted negative emotions about self, and the 'direct influence' account, which posits that delusions directly reflect emotional concerns. The then available evidence for the defence account was considered inconclusive, therefore the models concentrated on processes mediating a direct influence of emotions on delusions and other psychotic symptoms. A review of research evidence found common triggering as well as maintenance factors for psychotic symptoms like delusions, and neurotic symptoms, like depression, which suggest that a sharp distinction between psychotic (non-affective) and neurotic (affective) disorders may not be justified (Freeman & Garety, 2003).

Green et al. (2006) explored some of the implications of the cognitive model of persecutory delusion by Freeman et al. (2002), by searching for direct reflection of affect in the content of persecutory delusions. Their study assessed 70 participants diagnosed with schizophrenia or schizo-affective disorder from a randomized UK sample. In semi-structured interviews, the researchers elicited details about the content of persecutory delusions, like agent of the persecutor and pervasiveness of threat, which were then content analyzed and related to measured levels of anxiety, depression, self-esteem and psychotic symptoms. It was found that the content of delusions was characterized by severe levels of perceived threat, typically physical and psychological, often from a conspiracy of multiple persecutors. As predicted, greater perceived powerlessness towards the persecutor(s) was associated with higher levels of depression and lower self-esteem. Surprisingly, pervasiveness of threat was not related to higher levels of anxiety, explained by the researchers with idiosyncratic responses from participants

high in chronicity, where the role of anxiety may be less clear than during the initial formation of persecutory delusions.

It would be plausible to expect heightened sensitivity to others' negative affects, like anger, in people with paranoid delusions, but experimental research provided some surprising results. In a small sample of patients with early paranoid schizophrenia, Davis and Stewart (2001) found not increased awareness, but instead an inability to detect negative affect in the verbal component of complex communications (picture of facial expression plus printed message). The results may have been confounded by the combination of different delusion types in the sample, as some participants had persecutory, some grandiose, and some both types of delusions. A later experimental study by Combs, Michael and Penn (2001) with a larger sample focused on paranoid delusions and found a generally lower ability to recognize emotions and a lower ability to recognize negative affect, especially anger, in participants with clinical persecutory delusions and in participants high in non-clinical paranoia. The researchers speculated that the artificial nature of the affect stimuli may have caused participants high in paranoia to search for the 'true' underlying affect, thus confounding the responses. But their alternative explanation was that the findings were broadly in line with the defence account of delusions, which predicts a processing bias against negative emotions, leading to avoidance and insufficient processing of negative affective stimuli.

Freeman (2008) explained how virtual reality (VR) methodology may overcome limitations of traditional laboratory experiments by creating controlled social environments with high ecological validity. VR environments elicit affective responses equivalent to real situations, as a variety of studies, for example about flight phobia and public speaking anxiety, have confirmed. Using VR, Freeman et al. (2008) studied the occurrence of paranoid thoughts in the general population. 200 participants were psychologically assessed on items related to affect and cognition, and then experienced a virtual 4 minute ride in a London tube, created as an affectively neutral environment. About 40% of participants reported paranoid thoughts. These were predicted by higher levels of anxiety, depression, interpersonal sensitivity, negative beliefs about self and others, and loneliness, but also by perceptual anomalies and cognitive inflexibility. Surprisingly, neither data-gathering style (as assessed in a probabilistic reasoning task), nor degree of immersion in VR were predictive. The findings confirmed the important contribution of affective factors to paranoid ideation. As suggested by Freeman (2008), VR technology may be extended by using not neutral, but anxiety-inducing environments to study possible processing biases towards threat-related stimuli in paranoid participants.

But evidence for a focal role of emotion in delusion formation and maintenance also derives from research conducted in a hermeneutic epistemology, which seeks to explore individual meanings, rather than testing hypotheses and deriving general laws by applying quantitative methods. For example, using evidence from a therapeutic setting, Malacharuvil (2004) presents the case of an Asian woman who had been aggressive towards "white people" for years, seemingly based on a delusion that "white people" were against her and on command hallucinations telling her to be assaultive. Psychotherapy revealed intense sadness and emotional pain related to childhood memories about a bomb attack during the Vietnam War, where she had been severely injured and her nurse was killed. She had felt personally attacked by "white people", a plausible reason to develop the hatred which had nurtured the delusion. Malancharuvil suggested that therapy could help to resolve delusions by addressing underlying affective disturbances, thus pointing to trauma as contributing factor in the development of delusions.

There is compelling evidence for an association between trauma and mental illness. Studies found between 51% and 97% lifetime trauma history in people with severe mental illness (Resnick, Bond & Mueser, 2003). Trauma may result from childhood abuse (sexual, physical

and emotional abuse/neglect), but also experiencing or witnessing of violence in adulthood, war-related trauma or trauma resulting from psychotic experiences and hospitalization (see review in Morrison, Frame & Larkin, 2003). Traumatic experiences were found to be reflected in delusional content. This suggests that delusions can partly be understood as symptoms of post-traumatic stress disorder (PTSD), which is seen as maladaptive response to an intense affective disturbance leading to intrusive memories (flashbacks), delusions, hallucinations and other psychotic symptoms (Morrison et al., 2003).

As part of their study of paranoia in the general public, Freeman and Fowler (2009) assessed the lifetime trauma histories of 200 participants and found a significant association between trauma and persecutory ideation, which was explained by levels of anxiety. This pointed to affect as a non-specific, mediating factor between trauma and paranoia. Surprisingly, trauma history was not related to paranoid thoughts in the subsequent VR experience (the London tube ride). Freeman and Fowler pointed to methodological problems with self-report measures of trauma and paranoia, and speculated that the association may have reflected real connections between trauma and paranoid thoughts, while the VR environment assessed 'unfounded' paranoia in a neutral environment. Experimental studies using non-neutral VR environments may shed some light on the question.

VR environments use avatars, realistic but artificial personalities which are capable to elicit affective responses from research participants. This represents a departure from traditionally individualistic views on paranoia, which treat paranoia as a phenomenon inside the person, where other people and social structure represent an almost negligible context (Cromby & Harper, 2009). The idea that relations to others represent a central aspect in mental illness is taken up by interactionist perspectives. Cromby and Harper understand paranoia primarily as a disturbed way of relating to others, characterized by suspicion and hostility. They do not neglect possible biochemical factors in the development of paranoia, but point to the brain's plasticity and reactivity to the environment, for example in biochemical reactions to traumatic experiences. Their phenomenological perspective emphasizes that the individual basically experiences the world in 'feeling mode', with emotions pervading his being in the world.

Cromby and Harper point to strong evidence for an increased risk for mental illness from adverse social factors like immigrant status, poverty, joblessness or living in deprived areas. They suggest two possible pathways in which these factors may exert their impact: They can directly affect emotions by causing feelings of deprivation (social exclusion), low self-esteem and sense of threat. These emotions are typically associated with paranoia. Adverse social environments can also exert an indirect impact by negatively affecting family life and ways of relating to others. A consequence may be disturbed parenting, going along with an increased likelihood of adverse experiences in childhood. With reference to Ainsworth's attachment theory, Read and Gumpel (2008) suggest a causal chain of disturbed parenting leading to disorganized infant attachment, which may result in an increased vulnerability for later psychotic reactions to trauma in children growing up in adverse social environments. Attachment theory relies on evidence from attachment interviews which may not suffice positivist requirements for objectivity and value-neutrality, but the account seems highly plausible.

Conclusion

Research from different perspectives has considered the influence of emotions on delusion formation and maintenance. Research in the positivist tradition, especially the cognitive approach, has contributed models which locate affect predominantly among the predisposing and triggering factors. Empirical studies provide quantitative evidence for associations between

affect and delusional response, basically suggesting that affect impairs cognitive functioning. Quantitative evidence suggests both a direct and an indirect role of emotions: Emotional concerns are directly reflected in delusional content, as for example feelings of anxiety and their possibly bi-directional association with persecutory beliefs. Experimental evidence showing processing biases against stimuli which incorporate negative affect seem to support the idea that delusions serve a defensive function by protecting self-esteem from unwanted negative emotions. New experimental techniques like virtual reality may have the potential to overcome problems of ecological validity inherent in traditional experimental research in the laboratory.

Research in the hermeneutic epistemology, applying qualitative methodology, confirms the pervasive role of emotions in delusion formation and maintenance by pointing to the possibility that delusions mask underlying affective disturbances, for example resulting from traumatising experiences. Seen from an interactionist perspective, delusions, especially paranoid delusions, appear predominantly as disturbed ways of relating to others. This approach emphasizes the importance of adverse social factors, which contribute to the development of delusions by the leading to negative emotions about self and others. Attachment theory provides the explanation for a mechanism by which social adversity is transformed into disturbed patterns of relating to others, which may be at the heart of delusional disorders.

The initially presented 3-phase model (Roberts, 1992) helps to structure the ways in which emotions exert an impact. In phase I, before actual onset, feelings of social exclusion, low self-esteem, anxiety and anger emerge as direct responses to social adversity. These increase the risk of developing delusions directly through their negative impact on self-esteem, but also indirectly by increasing the likelihood for disturbed parenting and disorganized attachments. Phase II, the onset of acute psychosis, begins with a delusional mood characterized by anxiety and confusion, leading to a search for meaning. Delusional beliefs are adopted as they provide relief from prior confusion. It is in this phase where emotions seem to impair rational thought, leading to attentional and cognitive biases that make it difficult for the individual to reject delusional explanations for confusing experiences. And finally in phase III, the chronic phase of elaborated belief systems, emotions can be directly reflected in delusional content, but also seem to play an indirect role, for example when delusions are firmly held to protect the individual against unwanted emotions. In answering the research question, it is therefore concluded that explaining delusions as a purely cognitive problem would be missing out the pervasive influence of emotions on delusion formation and maintenance.

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