

## Acting on Delusions. I: Prevalence

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Associations between delusions and abnormal behaviour were retrospectively assessed in a sample of 83 consecutively admitted deluded subjects. All were interviewed about events in the previous month using a new measure of delusional phenomenology and action. For 59 subjects this information was supplemented by informant interviews. Clinical consensus was reached concerning the probability that actions reported by informants were linked to delusions. Half of the sample reported that they had acted at least once in accordance with their delusions. Violent behaviour in response to delusions was uncommon. Information provided by informants suggested that some aspect of the actions of half of the sample was either probably or definitely congruent with the content of their delusions. However, there was no link between self-reports and informants' reports of such action. A latent class analysis of self-reported delusional action suggested three classes of action, namely aggressive to self or other, defensive action, and either none or single action. Self-reported action was associated with delusions of catastrophe. Informant data suggested that persecutory delusions were the most likely to be acted upon, but in contrast delusions of guilt or catastrophe appeared to decrease the chance of delusional behaviour. Actions associated with abnormal beliefs are more common than has been suggested.

How frequently do psychotic patients act on their delusions? Rarely, according to conventional wisdom. "Nevertheless, the patients rarely follow up the logic to act accordingly, as, for instance, to bark like a dog when they profess to be a dog. Although they may refuse to admit the truth, they behave as if the expression is only to be taken symbolically" (Bleuler, 1924). In the same text, Bleuler wrote that, "The reaction to the delusion is sometimes adequate, in the sense that the persecuted ones complain, and defend themselves, but much more frequently the conduct of the patient is inadequate. They really do nothing to attain their goal." Otto Kant also observed the discrepancy between the intensity with which a belief was held and the likelihood of delusional action (Schmidt, 1986), as did Jaspers (1963). Since then the occasional text reaffirms the alleged rarity of action (e.g. Anderson & Trethowan, 1973; Fish, 1974; Merskey, 1980; Slater & Roth, 1969), while most ignore the problem. We are unaware of any major text or paper suggesting that delusions are commonly acted upon.

Despite the apparent consensus, it is difficult to find any data to support such impressions. In a study of remand prisoners, Taylor (1985) noted the association between delusions and violent offending. She also found a particular association between violent behaviour and passivity experiences. Remand prisoners may be an atypical group of those with psychosis, however, and no comparable study exists of the frequency of acting on delusions in a non-offender population.

The aims of the current study were to establish the prevalence of delusional action in a consecutive sample of deluded patients, and to look at beliefs associated with such action. Companion papers are concerned with the internal phenomenological associations of action, and actions in response to hallucinations (Buchanan *et al*, following paper, this issue; Reed *et al*, in preparation).

### Method

A daily check was made over seven months on all acute admissions to the Bethlem Royal and Maudsley Hospitals, and, in the latter part of the study, to the Dulwich Hospital. All those aged 18 or over admitted with a functional psychosis were eligible for the study, provided they possessed at least one non-mood-congruent delusion according to the criteria of the Present State Examination (PSE; Wing *et al*, 1974). Of the resulting 98 subjects, 15 were either too thought disordered to be interviewed, or refused consent, leaving a final sample of 83 (85%). The mean age was 33 (95% confidence interval (CI) 39.0–35.0), and 46 (55%) were men. Mean premorbid full-scale IQ as estimated from scores on the National Adult Reading Test (Nelson, 1982) was 108 (95% CI 105–112). Mean duration of illness was 7.4 years (95% CI 6.5–8.3). All had a clinician's diagnosis of schizophrenia, paranoia, or paranoid psychosis. For the 69 cases who completed a full PSE, the CATEGO classifications were schizophrenia (62%), paranoid psychosis (9%), affective psychosis (26%) and other psychosis (3%). The mean interval between admission and interview was 10.1 days (95% CI 8.7–11.6).

Assessing the behaviour of psychotic subjects presents considerable difficulty, which increases if an attempt is

made to judge the relationship between an abnormal belief and action. Some of the types of behaviour exhibited by psychotic patients reflect abnormal beliefs, but appear normal to the observer, while 'crazy' behaviour may have no relationship with any abnormal beliefs. For the current study it was therefore accepted that even if a single construct of delusional action existed, which we doubt, such a construct could not be measured by any single procedure. Instead, we studied two distinct perspectives, namely self- and observer report. Information was obtained in five stages:

- (a) all subjects were asked about the full range of their delusions
- (b) a principal belief was established with the subject, and then rated in detail
- (c) all subjects were asked whether or not any action had occurred as a result of the principal belief
- (d) all informants who could be traced were interviewed about the subject's actions before admission
- (e) a panel of clinicians was asked to rate:
  - (i) the probability of a link between informant-rated actions and subject-rated principal delusion
  - (ii) the probability of a link between informant-rated actions and any delusion.

#### Information from the subject

The first part of the study concerned the subject's own perception of the extent to which his/her actions were influenced by delusions. Once consent had been obtained, all were interviewed using the PSE, and a new instrument designed to record dimensions of delusional experience, the Maudsley Assessment of Delusions Schedule (MADS). The instrument is listed in Appendix 1; further details are provided elsewhere (Taylor *et al*, 1993). In brief, the instrument is a standardised interview covering the phenomenology of abnormal beliefs, the associated affect, the reasons given by the subject for possessing such beliefs, the behaviour that has resulted, and the insight the patient might have as to the problem. All interviews were carried out by one of two researchers (AB and AR). Inter-rater reliabilities are presented in Appendix 1; details of test-retest and other psychometric measures are given by Taylor *et al* (1993).

In all interviews, the presence or absence of a 'principal' belief, any belief which the subject felt was of particular importance, was established. This became the focus of the rest of the interview.

Once an abnormal belief had been identified, delusional action was defined by the subject's own response to direct questions. No attempt was made to assess how logical was the connection between belief and action, or even if such action had actually occurred in the manner described.

Each subject was then asked about his/her behavioural reactions to the principal belief (see Table 1), and these were designated 'positive' or 'negative'. The latter was behaviour that had been stopped or altered because of the belief – an example would be a subject who refused to leave his house because of persecutory delusions. Both types of actions

are considered as 'acting on delusions'. The inter-rater reliability of each item is listed in Table 1.

#### Information from informants

Attempts were made to locate informants who could give information about the subject's actions in the month before interview. Fifty-nine such informants were interviewed, for 71% of the patient sample. No informants existed for 16 subjects, and for eight patients informants were identified but could not be traced. No informants refused to be interviewed. Informant interviews were conducted blind to the results of the subject interviews.

Each informant was asked about a range of actions, previously chosen on the basis of a pilot study in a separate sample of newly admitted patients with schizophrenia (Nimgaonkar *et al*, 1988). Obligatory questions are listed in Appendix 2. Informants were asked about the subject's actions in the month before admission, the maximum time for which accurate information can be recalled (Rutter & Brown, 1966). A series of stem questions were asked. Further probing of any positive replies included more precise details of type of action and its frequency. Informants were not asked about the subject's mental state.

Most informants were close relatives, but social workers and residential hostel workers were also contacted. For two subjects this was supplemented by additional information from the general practitioner. Although interviews were carried out shortly after admission, the type of delusion occasionally predicted specific actions in hospital (e.g. "The person in the next bed is bewitching me"). For those subjects, key nurses were also interviewed.

#### Linking belief and action

Rating action in psychotic subjects is complex. The outcome measures chosen here include violent behaviour, abnormal behaviour, and delusional behaviour. Violent behaviour is the simplest to rate, and has received the most attention in the literature. Abnormal behaviour covers actions that appear unusual to the observer. Although such actions may often be in response to delusions, this is not always the case. Similarly, certain actions that are probably linked to delusions may not appear abnormal to the observer unaware of the subject's mental state. An example is a subject who wore a green tie because he believed he was under surveillance by the IRA and this would protect him.

Having identified the behaviour, deciding whether or not it is linked to an abnormal belief is difficult. Even in non-psychotic subjects the links between belief and action are by no means obvious, while assessing similar links in psychotic individuals presents further problems. Our intention was not to determine whether or not an action was the result of a delusion, which is unknowable, but whether an outside observer would judge the action to be congruent with an abnormal belief. Explanations advanced by the subject, although recorded, were thus no longer relevant.

Behaviour was divided into four categories: aggressive behaviour to others, aggressive behaviour to self, delusional behaviour in response to the principal belief identified on the MADS, and any delusional behaviour. Informant interviews were used to rate aggressive behaviour using an abbreviated check-list based on that of Silver & Yudofsky (1987).

Two ratings were made of delusional action. The reason for having two categories of delusional action was because the main focus of the MADS was the subject's principal belief, but as delusions rarely present singly, there were examples of behaviour potentially in response to abnormal beliefs other than the principal one. The first rating concerned only the principal belief, since that belief was the main focus of the standardised interview. The second related to any belief and action, with the highest degree of congruency being recorded. If only one belief was known, then the second rating was automatically the same as the first. The second rating of any delusional action gives a more liberal estimate of the prevalence of action in response to any abnormal beliefs.

Ratings were made by a panel consisting of a forensic psychiatrist (PJT), two general psychiatrists (JC, AR)

and a psychologist (PG). Information available to the panel commenced with the subject's principal delusion, and then included further information concerning other abnormal beliefs obtained during the standardised interview. Each observer was asked to rate independently the behaviour as being unrelated, probably related, or definitely related to the abnormal belief. Reliability was assessed for the four independent raters, using the generalised kappa. The kappas for rating violent behaviour towards others (0.88) and towards self (0.94) were high. Those for rating delusional behaviour in response to the principal belief (0.73) and any belief (0.62) were lower, but conventionally still indicate reasonable agreement (Everitt, 1989). In the event of disagreement the majority classification was used.

**Results**

**Self-reported delusional action: prevalence and classification**

The prevalences of self-reported delusional actions are listed in Table 1. Overall 60% of the sample reported at least one delusional action, and 20% claimed three or more.

Latent class analysis was used to study the underlying distribution of delusional actions (Everitt, 1986). This approach assumes that the associations among observed variables are generated by underlying classes within which variables are independent. The proportions of observations in each class are estimated in addition to the within-class probabilities of particular responses. The fit of the model can be assessed by use of a  $\chi^2$  statistic, although equally important is whether or not the classes found are capable of sensible interpretation. Looking at the frequency of 'positive' behaviour, the most satisfactory solution was reached when the analysis was constrained to three classes (Table 2). This gave a modest improvement in goodness of fit compared with a two-class model, but more importantly the solution itself was clinically comprehensible. Table 2 gives the final parameter values for the three groups on each of the eight positive types

**Table 1**  
Prevalence of specific self-reported delusional actions

Action on beliefs	No. (%)	Kappa with positive response
<i>Positive</i>		
Have you written to anyone?	10 (13)	1.0
Have you tried to stop X happening?	27 (35)	0.91
Have you tried to protect yourself in any way?	19 (25)	0.75
Have you ever tried to escape what is happening?	13 (17)	
Have you ever broken anything because of this?	15 (19)	0.94
Have you hit anyone because of this?	14 (18)	0.81
Have you tried to harm yourself because of X?	11 (14)	0.91
Have you tried to move or leave your house (area) because of X?	9 (12)	0.86
<i>Negative</i>		
Has X stopped you from meeting friends?	28 (36)	0.72
Has X stopped you from watching television or listening to the radio?	22 (29)	
	28 (33)	0.91 <sup>1</sup>
Has X stopped you from eating/drinking anything?	15 (19)	0.82
Has X stopped you from using transport?	14 (18)	0.78
Has X stopped you from going to work?	12 (15)	0.70
Has X stopped you from taking medication?	6 (8)	0.65
Has X stopped you from going to hospital/your doctor as an out-patient?	4 (5)	0.79

1. Kappa coefficient refers to the inter-rater reliability of the question "Has X stopped you from watching television?" The additional words on listening to the radio were added after reliability testing was completed.

**Table 2**  
Latent class analysis of self-reported positive delusional action

	Class 1 (None or single action)	Class 2 (Aggressive to self or other)	Class 3 (Defensive action)
Write	0.14	0.12	0.08
Stop	0.13	0.45	0.59
Protect	0.05	0.74	0.56
Escape	0.00	0.23	0.63
Break	0.17	0.70	0.00
Hit	0.10	1.00	0.00
Self-harm	0.07	0.54	0.14
Move	0.04	0.46	0.18
No. of subjects (% of sample) in each class	13 (15.7%)	61 (73.5%)	9 (10.8%)

of delusional behaviour used. Each value represents the probability of a positive response on a given action for each of the three classes.

The first class gave high probabilities on combinations involving either no action at all or any single action, with the exception of protect and escape. It also included responses involving two types of behaviour of which one was writing. This class has been labelled 'none or single action'. All the combinations with high probabilities of membership of class 2 contained various combinations of hitting and breaking objects, together with any other action. This has been labelled 'aggressive action'. The third class consisted largely of combinations of behaviour involving stopping, protecting, escaping and moving. A single response of escaping, and to a lesser extent protecting, had high probabilities of belonging to this class, which has been labelled 'defensive action'. Frequencies of each category are listed in Table 2.

The number of potential combinations dictated that latent class analysis of positive and negative actions were performed separately. Both two-class and three-class solutions gave similar results, each containing a variable with high probabilities of none or single negative actions, with probabilities of either 0.74 (two-variable constraint) or 0.58 (three-variable constraint). The remaining class in the two-class solution, or the two classes in the three-class solution, were accounted for by progressively increasing numbers of negative variables. Thus the analysis does not support any particular grouping of negative actions, unlike the corresponding analysis of positive actions.

#### Informant-reported actions

Table 3 lists the prevalence of delusional action as determined by consensus ratings. Half of the 59 subjects for whom an informant was available were rated as having either definitely or probably acted on their principal delusion in the month before admission (95% CI 38–62%). This figure rose to 77% (95% CI 66–87%) if any delusional action was included. If delusional action is related to the presence or absence of an informant, then this might have introduced a systematic bias, but we think this unlikely.

Table 3  
Frequency of informant-reported delusional action  
(consensus judgement)

	No.	(%)
Action on principal belief		
none	31	(52)
probable	11	(19)
definite	17	(29)
Action on any belief		
none	14	(23.3)
probable	19	(31.6)
definite	26	(45.0)

24 had no informant interviews.

#### Relationship between self-reported and informant-reported action

No association was found between self-reported and informant-reported probable or definite delusional action ( $\chi^2 = 1.21$ , d.f. = 2,  $P = 0.55$ ). Two examples of lack of congruence will be given.

A 22-year-old lady believed people were trying to harm her using occult powers, but denied doing anything as a result. On the other hand, her parents reported that she had assaulted them and her sister, had climbed out of a window to escape them, and had gone to the police station to complain about the parents' use of diabolic powers.

An opposite example was a 30-year-old lady who believed people in her neighbourhood were impostors. She described asking them who they really were, and also visits to other neighbourhoods looking for new accommodation. However, her sister had not observed any unusual behaviour concerning the neighbours, or any attempts to leave the area. Instead the sister said that the subject would buy food only in certain shops, and only ate food for diabetics, although she was not a diabetic. She was classified as a 'non-actor' by informant report because none of the informant-observed actions could be linked to her mental state as revealed by the PSE.

The lack of congruence between subject and informant reports is discussed below.

#### Types of delusion associated with action

Attempts were made to link the content of delusion with both self-reported and observer-reported action. For this purpose only those delusions reported by more than 10% of the sample were studied further – thus excluded were delusions of depersonalisation, subcultural delusions, delusional jealousy, and delusions concerning physical appearance.

Looking first at the latent-class-derived classification of self-reported acting on delusions, delusions of catastrophe were significantly associated with the subject being classified as an aggressive actor ( $\chi^2 = 12.27$ , d.f. = 2,  $P = 0.002$ ). There was a similar but weak trend for passivity experiences ( $\chi^2 = 4.01$ , d.f. = 2,  $P = 0.134$ ). There was no association between membership of any of the three classes of self-reported delusional action and delusions of reference, delusional memories, religious delusions, delusional jealousy, persecutory delusions, grandiose delusions, delusions of guilt or sexual delusions.

Turning to the panel judgements based on informant-reported action, delusions of catastrophe were significantly associated with non-action on the principal belief ( $\chi^2$  test for trend = 5.33, d.f. = 1,  $P < 0.025$ ). Furthermore, there was a strong association between delusions of catastrophe and delusional non-action on any belief ( $\chi^2$  test for trend = 7.13, d.f. = 1,  $P < 0.01$ ), not just on the principal belief.

There were no subjects with probable delusional action and delusions of guilt, so 'probable' and 'definite' were combined together, and a simple  $\chi^2$  statistic, rather than the test for trend, computed. This suggested that delusions

of guilt were negatively associated with delusional action ( $\chi^2 = 6.307$ , d.f. = 1,  $P = 0.012$ ). A similar negative association was obtained if grandiose delusions were present ( $\chi^2$  test for trend = 5.28, d.f. = 1,  $P < 0.025$ ). There was no relationship, either positive or negative, between passivity delusions and delusional action ( $\chi^2$  test for trend = 1.01, d.f. = 1,  $P > 0.25$ ). There was no evidence that these associations were the result of confounding by other delusions associated with either action or non-action. IQ as measured by either NART scores or the digit symbol subtest of the revised Wechsler Adult Intelligence Scale (Wechsler, 1981) was not associated with delusional action, suggesting that IQ is also not a confounder of the observed associations.

On the other hand, persecutory delusions were associated with probable and definite delusional action, for both action on the principal belief ( $\chi^2$  test for trend = 3.33, d.f. = 1,  $0.1 > P > 0.05$ ) and action on any belief ( $\chi^2$  test for trend = 3.68, d.f. = 1,  $0.1 > P > 0.05$ ).

Certain cautions are necessary when interpreting these findings. Firstly, although significant statistical associations were found between delusions of catastrophe or passivity delusions and lack of action, the proportion with each delusion remains small – 17% had delusions of catastrophe and 19% passivity delusions. Secondly, the paragraphs above refer to possible associations between certain delusions and action on either any delusional belief, or the principal belief. Thus the results show that certain delusions facilitate delusional action in general, but not that certain delusions are more likely to be directly acted upon. To examine this, we analysed specific associations between the type of principal belief and action. Only persecutory and passivity delusions occurred with sufficient frequency to be further analysed. Using the panel ratings, persecutory delusions were significantly more likely to be acted upon than all other principal beliefs ( $\chi^2 = 12.06$ , d.f. = 2,  $P = 0.002$ ). Passivity delusions were no more likely to be acted upon than all other delusions ( $\chi^2 = 4.2$ , d.f. = 2,  $P = 0.12$ ).

#### Delusional action and violence

Of the 59 patients for whom informant information was obtained, 17 had shown minor violent behaviour, and 2 serious violence before admission. Nine had tried to harm themselves, rising to 24 if self-harm was extended to include disorders of appetite potentially damaging to health. There was no trend for any relationship between acting on delusions and informant-observed violent action towards either self or others.

There was, however, a correlation between self-reported action and observer accounts of violent behaviour ( $\chi^2 = 7.6$ , d.f. = 2,  $P = 0.02$ ). The crude numbers showed that this was solely the result of the contribution of aggressive, as opposed to defensive, actions. This gives support to the validity of the classification of self-reported delusional actions listed above.

#### Discussion

Two strategies were used to study the links between belief and action. In the first, only self-report was

used. No attempt was made to assess the accuracy of the patient's account of his/her actions, but satisfactory inter-rater reliability has been shown. In the second, an attempt was made to obtain an independent account of the range of behaviour seen by observers, which was then related to the investigators' knowledge of the subject's mental state.

The methods chosen had limitations. Firstly, in the data collection, it is reasonable to assume that informants were unaware of at least some of the delusional actions exhibited by some patients (false negatives). Other possible causes of false negatives were that informants might describe only those actions they considered relevant to the subject's illness, although this was reduced by using a standardised interview and a check-list. Unlike the interview with the subject, the content of the informant interview did not vary according to the nature of the subject's delusion.

False positives were also possible. With the occasional exception, informants were not trained observers of unusual behaviour, and may have reported behaviour that did not occur, perhaps to precipitate admission. However, all interviews took place after admission, and it was emphasised that the information obtained would not be communicated to the clinical team nor recorded in the notes. We conclude that the reported prevalence of delusional action, high though it is, may still underestimate the true prevalence.

Both false positives and negatives were possible regarding the information obtained from the subject. In general, subjects did not appear reluctant to discuss any delusional action, but it is possible that some behaviour was not admitted to, because it was considered either too trivial or too embarrassing. The reverse is equally possible – that the subject was more likely to reveal both beliefs and actions to a neutral observer than a member of his/her family. Indeed, one of the most robust findings of the study was the lack of congruence between the subject's assessment of action and that of the informants.

Methodological problems were also apparent in the manner in which abnormal beliefs were linked to abnormal behaviour. Some delusions were by their nature almost impossible to link with actions. For example, the principal belief identified for one subject was 'thoughts are put into my mind from spaces in the air'. It is difficult to think of any behaviour which could logically be linked to this belief, so although the subject had behaved unusually, which may have been linked in the subject's mind to his beliefs, as these links were not accessible to an observer, the subject was classified as a 'non-actor'.

The lack of congruence between subject and informant reports of delusional action may have several explanations. Methodological inconsistencies may be one. However, in general we believe that each method addresses different constructs, and that even if the assessments were free of error, they may still result in different findings. Patient-reported delusional actions require the patient to make the link, and is thus influenced by his/her own abnormal mental state. It is thus a subjective rating that cannot be separated from the psychosis. On the other hand, the use of observers to assess the relationship between actions recorded by people other than the subject, and the subject's mental state, depends upon an assessment of motive and intention by observers who may have less distorted, but still incomplete, information. Assessing motive and intention is difficult in any subject, not only those with psychosis, while classic Jasperian phenomenology holds that delusions are by their nature not understandable.

The two approaches chosen here to evaluate the effects of delusions on action are thus complementary. Using either strategy, acting in accordance with delusions was considerably more common than the literature suggested, even during the limited period assessed.

Why have such findings been overlooked in the past? One possibility is that the usual focus of concern and attention surrounding psychotic patients is their violent or socially disruptive behaviour – perhaps other unusual, but not harmful, actions go largely unnoticed. Furthermore, we have shown that these apparently commoner, but less visible actions, are not associated with violent behaviour, at least during the brief period assessed.

The previous finding of an association between passivity experiences (Taylor, 1985) led us to hypothesise a relationship between passivity experiences and self-reported delusional action. However, this was not confirmed, nor was an association found for informant-observed actions, or for violent behaviour. This may reflect sample differences between the studies, since violent behaviour was considerably less frequent in the current study. We had reasoned that the perceptual abnormalities associated with passivity experiences give additional 'proof' of the correctness of the delusional intuition. This may be correct, but was not a risk factor for delusional action. Instead, it is possible that passivity delusions are not risk factors for the more complex and goal-directed behaviour that formed the majority of the actions studied in this sample, but, because of the relinquishment of self-control inherent in the passivity experience, could still be associated with more serious violent behaviour.

The finding of an association between delusions of catastrophe and self-report of aggressive action was surprising and unexpected. Furthermore, delusions of catastrophe were significantly negatively related to informant-observed delusional action. We cannot explain why delusions of catastrophe should have apparently opposite effects on self- and informant-reported behaviour, and, unless replicated, cannot exclude a type 1 error.

On the basis of informant-reported action, persecutory delusions were the sole phenomenological feature associated with delusional action in general. Although this is intuitively comprehensible, we were surprised that the association did not extend to passivity delusions, and we also did not predict that certain delusions (catastrophe and guilt) would protect against action. Observable delusional action is more likely in the presence of persecutory delusions, and less likely in the presence of delusion of guilt and grandiose delusions. It should be emphasised that these results do not mean that acting upon grandiose delusions or delusions of guilt is unlikely, but that delusional action as a consequence of *any* belief becomes less likely if the subject experiences either grandiose delusions or delusions of guilt. We are able to conclude only that persecutory delusions *per se* are more likely to be acted on than other types of delusion.

#### Appendix 1

##### Maudsley Assessment of Delusions Schedule and measures of inter-rater reliability

The complete instrument takes the form of a semistructured interview and associated instructions. Inter-rater reliability was measured as part of the testing of the instrument. Where more than two ratings were available for an item, the inter-rater reliability is described as a weighted kappa coefficient; where only two ratings were available it is described as an unweighted kappa.

Item	Number of ratings available	Inter-rater reliability
(1) <i>Conviction</i>		
How sure are you about X?	5	0.84
(2) <i>Belief maintenance factors</i>		
Can you now explain why you continue to think that X is so? Has anything happened since the idea first came to you?		
Events/states since formation	2	1.0
Events/states in last week	2	0.78
Internal state maintaining belief (e.g. mood, abnormal experience)	2	0.59

External events maintaining beliefs	2	0.75	Has X stopped you from meeting friends?	3	0.72
Do you at present (or have you in the past month) looked for any evidence or information either to confirm your view or to test whether it may be mistaken?	2	0.73	Has X stopped you from watching television?	3	0.91
Asking you to think about it now – can you think of anything at all that has happened that goes against your belief?	2	0.75	Has X stopped you from eating/drinking anything?	3	0.82
When you think about it now is it at all possible that you are mistaken about X?	2	0.91	Has X stopped you from using transport?	3	0.78
(3) <i>Affect relating to chosen belief</i>			Has X stopped you from going to work?	3	0.70
How does the belief make you feel? Does it make you feel:			Has X stopped you from taking medication?	3	0.65
Elated?	2	0.71	Has X stopped you from going to hospital/your doctor on an out-patient basis?	3	0.79
Unhappy/miserable/depressed?	2	0.88	Is there anything else which X has stopped you from doing?	3	1.0
Terrified/frightened?	2	0.92	(5) <i>Preoccupation</i>	5	0.62
Anxious/tense?	2	0.83	(6) <i>Systematisation</i>	4	0.58
Angry?	2	0.92	(7) <i>Insight</i>		
(4) <i>Action</i>			How far do you think others share your beliefs?	5	0.88
Does X make you do anything in particular?			Do you ever discuss your ideas with others?	2	0.83
Have you talked to anyone about X?	3	0.77	Do you ever have arguments about your beliefs?	5	0.89
Have you written to anyone?	3	1.0	Earlier I asked you whether or not you felt others shared your belief about X. I'd like to clarify whether you feel that other people also believe X – either openly, or perhaps without talking about it?	3	0.78
Have you tried to stop X happening?	3	0.91	What would have to happen to make you think that you might be wrong about X?	3	0.62
Have you tried to protect yourself in any way?	3	0.75	Do you think that seeing a psychiatrist might help you (has helped you) in any way?	3	0.79
Does X make you lose your temper?	3	0.79	Do you think that medication might help you (has helped you) in any way. . . how?	4	0.90
Have you ever broken anything because of this?	3	0.94	How much have you discussed X with your doctor and the nurses on the ward?	3	0.71
Have you felt like hitting someone because of it?	3	0.87	Are you psychologically unwell in any way. . . is there anything wrong with your nerves?	3	0.84
Have you hit anyone because of it?	3	0.81	Let me suggest something hypothetical to you – something that does not fit with your view and you could tell me how you think you would react	4	0.90
Do you know the person/people you have/may have harm(ed)?	3	0.79			
Have you tried to harm yourself or harmed yourself accidentally because of X?	3	0.91			
Have you tried to move or leave your house because of X?	3	0.86			
Have other changes resulted?	3	0.59			
<i>For those hearing voices only:</i>					
Do the voice(s) tell you to do anything?	3	1.0			
Do you have to obey?	3	0.85			
Do you do anything to escape them?	3	1.0			
Has X stopped you from doing things you would normally have done?					

<i>If behaviour or act injured or could have injured someone, or caused damage to property:</i>		
Looking back on (the behaviour X), do you now feel that you were justified, or were you wrong to do what you did?	3	0.68
Was (the behaviour of X) against the law?	3	0.19
<i>If the act involved personal danger or risk (e.g. arrest):</i>		
How dangerous was (the behaviour of X). . . would you take the same risk again?	3	0.40
Why do you feel that (the people involved) responded to you in the way they did—were they right to do so?	3	1.0

## Appendix 2

### Informant interview

We are interested to know whether X behaved in ways that seemed to you either odd, unusual, disturbing or in any way out of the ordinary during the past month. We are interested in what X actually did, as well as the possible reasons for it.

#### (1) Behaviour in the home

- (1.1) Has anything he/she heard on television, radio or in the newspapers, during the past month, seemed to give rise to any odd or unusual behaviour or distress? If so, can you give me an example? How often has that sort of thing occurred? What do you think was the reason for the behaviour?
- (1.2) Has X been writing letters or making telephone calls to unusual people?
- (1.3) Has X been feeling unsafe, frightened or scared at home? If so, has X been taking extra precautions, such as locking the door or putting a chain on the door?
- (1.4) Has there been any change in X's eating and drinking habits? Has he/she been refusing food or drink?
- (1.5) Has X been dressing in an unusual, inappropriate or different way?
- (1.6) Has X been behaving in the house in any other different or unusual ways?

#### (2) Behaviour to others

- (2.1) Has X been suspicious of people recently? If so, how has this been shown? Has X been checking on anyone, or jealous of anyone?

#### (3) Violent behaviour (against people) (do not rate verbal threats)

- (3.1) Has X been violent to anyone? Who? In what way was he/she violent? Did he/she use a weapon? Was there any injury?

#### (4) Antisocial behaviour (against property, inside or outside home)

- (4.1) Has X damaged anything, either inside or outside the home? What has been damaged?
- (4.2) Has X been doing anything else likely to get him/her into trouble?

#### (5) Behaviour to self

- (5.1) Has X tried to harm him/herself?

#### (6) Behaviour outside the home

- (6.1) Has X contacted the police? Has X contacted anyone else in authority, such as lawyers, MPs?
- (6.2) Has X been worried about his/her health? Has he/she visited the doctor or a hospital?
- (6.3) Has X attended any new meetings or joined any new organisations?
- (6.4) Has X been spending money in an extravagant or unusual way? If so, what on?

#### (7) Behaviour at work

- (7.1) Has X been working during the last month? Do you know if X behaved in any new, unusual or odd ways while at work?

#### (8) Religious behaviour

- (8.1) Does X have any strong religious views? Has he/she attended church recently? Has X developed any new religious beliefs? Has he/she done anything because of these beliefs?

#### (9) Others

- (9.1) Has X done anything else unusual, odd or new in the last month that you haven't already mentioned?

Any positive answers were probed further, and a full description of the behaviour, its frequency and any possible motives obtained. Frequency was rated as follows:

- 0 = did not occur  
 1 = one of these behaviours definitely occurred on at least one occasion, but no evidence of anything but rare  
 2 = occurred more than once but not frequently (e.g. not more than five or more times)  
 3 = occurred frequently (e.g. at least five times)  
 4 = present more or less continuously (at least every day).

Acknowledgements, references and authors' details are given at the end of the following paper