It is evident from the burgeoning literature that many researchers regard cognitive contents and processes as etiologically important in obsessive-compulsive disorder (OCD). Several models consider cognitive factors to be central to OCD (e.g. Foa & Kozak, 1986; Salkovskis, 1989; Tallis, 1995a). Treatments of OCD intended to modify beliefs and appraisals also have been developed (e.g. Freeston, Rhéaume & Ladouceur, 1996; Salkovskis & Westbrook, 1989; Sookman, Pinard & Beauchemin, 1994; van Oppen, de Haan, van Balkom, Spinhoven, Hoogduin & van Dyck, 1995), and may be particularly useful for cases of OCD that prove refractory to other forms of therapy (Salkovskis & Warwick, 1985).

To facilitate research into the cognitive mechanisms and treatments of OCD, several measures of OCD-related beliefs have been developed (Table 1). At least 16 of these instruments include measures of beliefs and attitudes that are thought to be relevant to OCD. Unfortunately, the number and diversity of these measures have created a confusing picture of the role of cognitive phenomena in OCD. Problems evident in this research include multiple overlapping measures, lack of psychometric evaluation, and lack of consensus among researchers as to the types of cognitive contents that are most likely to be important in OCD. These factors create difficulty in comparing findings across studies. Coordinated research on assessment could save considerable time and expense in advancing the study of cognition in OCD. Standardization of definitions and measurement instruments would allow for more rapid identification of possible etiologic mechanisms, assist in the development of novel interventions, and provide potentially important new ways of evaluating the effects of cognitive, behavioral, and pharmacological therapies. In order to develop OCD-related cognitive measures, extensive coordinated research must be conducted over the next several years.
DEVELOPMENT OF THE OBSESSIVE COMPULSIVE COGNITIONS WORKING GROUP

Following a symposium on OCD-related beliefs at the World Congress of Behavioural and Cognitive Therapies in Denmark in July 1995, a small group of participants met to discuss the cognitive assessment of OCD. We agreed to engage in a coordinated effort to develop and evaluate assessment strategies, including self-report and laboratory methods. Thus, the Obsessive Compulsive Cognitions Working Group was formed. As an initial step, organizers agreed to assemble all self-report instruments on OCD beliefs in order to identify domains and relevant items. They collected 16 instruments (Table 1) that were judged to assess 19 different domains of beliefs thought to contribute to the development and maintenance of OCD. The domains are shown in Table 2. A second meeting was held at the annual conference of the Association for the Advancement of Behavior Therapy in Washington, DC in November 1995 to further organize efforts for a larger working group meeting.

The third and so far largest meeting of the working group occurred in June 1996 in Northampton, Massachusetts, with 26 members attending. Funding for this 3-day meeting was provided by Solvay Pharmaceuticals. A subsequent meeting was held at the annual conference of the Association for the Advancement of Behavior Therapy in New York in November 1996. The balance of the present article provides a summary of the results of these meetings, with two goals in mind: (1) To describe our progress in developing measures of OC-related cognition; and (2) to provide a possible template for investigators in other areas who seek coordinated research efforts to advance comparable fields.

### Table 1. Measures relevant to the assessment of OCD-related beliefs

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Instrument</th>
<th>Subscales</th>
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<tbody>
<tr>
<td>Brown et al. (1995)</td>
<td>Attitude and Belief Scale</td>
<td>1. Importance of thought control</td>
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<td></td>
<td></td>
<td>2. Fusion of thought &amp; action (consequences)</td>
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<td></td>
<td></td>
<td>3. Shame &amp; embarrassment about intrusive thoughts</td>
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<td>4. Positive attributes of unwanted intrusive thoughts</td>
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<tr>
<td>Clark and Purdon (1995a)</td>
<td>Meta-cognitive Beliefs Questionnaire</td>
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<tr>
<td>Freeston et al. (1995)</td>
<td>Typical Interpretation of Thoughts</td>
<td>1. Responsibility, guilt, blame, punishment and loss</td>
</tr>
<tr>
<td>Freeston et al. (1993)</td>
<td>Irrational Beliefs Regarding Obsessions</td>
<td>2. Overestimation of threat</td>
</tr>
<tr>
<td>Frost et al. (1990)</td>
<td>Multidimensional Perfectionism Scale</td>
<td>3. Intolerance of uncertainty</td>
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<tr>
<td>Frost et al. (1993)</td>
<td>Lucky Beliefs Questionnaire</td>
<td>1. Concern over mistakes</td>
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<tr>
<td>Kozak (1996)</td>
<td>Fixity of Beliefs Scale</td>
<td>3. Parental expectations</td>
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<tr>
<td>Kugler and Jones (1992)</td>
<td>Guilt Inventory</td>
<td>4. Parental criticism</td>
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<tr>
<td>Shafrazi et al. (1996)</td>
<td>Thought-Action Fusion Scale</td>
<td>6. Order and organization</td>
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<tr>
<td>Rhéaume et al. (1995)</td>
<td>Responsibility Questionnaire</td>
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<tr>
<td>Salkovskis (1992)</td>
<td>Responsibility Scale (Versions I &amp; II)</td>
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<tr>
<td></td>
<td>Cognitive Schemata Scale</td>
<td>2. Responsibility</td>
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<td></td>
<td></td>
<td>3. Confusion of thought &amp; action/magical thinking</td>
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<td></td>
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<td>4. Pathological doubting/indecision</td>
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<td>5. View of/response to ambiguity, newness, &amp; change</td>
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<td>6. Need for control</td>
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<td>7. View of/response to strong affect</td>
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<td>8. Perfectionism</td>
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<td>9. Perseveration</td>
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<td></td>
<td>10. Overinclusion/underinclusion</td>
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<td>11. Generalization</td>
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<td>12. Self-percept</td>
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<tr>
<td>Steketee et al. (1996)</td>
<td>Obsessive Compulsive Beliefs Questionnaire</td>
<td>1. Responsibility for harm</td>
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<td></td>
<td></td>
<td>2. Controllability of thoughts and actions</td>
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<td></td>
<td></td>
<td>3. Estimation of risk</td>
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<tr>
<td></td>
<td></td>
<td>4. Tolerance for uncertainty</td>
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<tr>
<td>Tallis (1995b)</td>
<td>Obsessional Beliefs</td>
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<tr>
<td>OC belief domain</td>
<td>Description</td>
<td></td>
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<td>------------------------------------------------------</td>
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<tr>
<td>Overestimation of severity or</td>
<td>Overestimation of the probability or severity of threat or harm.</td>
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<tr>
<td>probability of danger</td>
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<tr>
<td>Inflated responsibility</td>
<td>The belief that one has the power, which is pivotal to bring about or prevent subjectively crucial negative outcomes. They may be actual, that is, having</td>
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<tr>
<td>Omissions/commission</td>
<td>consequences in the real world, and/or at the moral level.</td>
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<tr>
<td>Thought-action fusion</td>
<td>Belief that not preventing something harmful from happening is as bad as actually doing something harmful.</td>
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<tr>
<td>Superstitions/magical thinking</td>
<td>Beliefs that defy normal laws of cause and effect.</td>
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<tr>
<td>Overimportance given to thoughts</td>
<td>Beliefs that “I think about it because it’s important” and “The thought is important because I think about it”.</td>
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<tr>
<td>Consequences of having</td>
<td>Belief that one will become very anxious as a consequence of having unwanted thoughts, and that this will impair one’s functioning.</td>
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<td>thoughts-emotional cost</td>
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<tr>
<td>Control over thoughts</td>
<td>Importance of control over one’s thoughts.</td>
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<tr>
<td>Perfectionism</td>
<td>Belief that a perfect state exists that one should try to attain.</td>
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<tr>
<td>High personal standards for one’s</td>
<td>Beliefs that one needs to perform according to some very high standard.</td>
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<td>performance</td>
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<tr>
<td>Concern over mistakes</td>
<td>Belief that making mistakes is very bad.</td>
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<tr>
<td>Rigidity; follow rules strictly</td>
<td>Belief that it is important to follow rules in a strict manner. Includes scrupulousness, and excessive concerns with one way of doing things.</td>
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<tr>
<td>Control over life circumstances</td>
<td>Belief that one must exercise complete control over one’s life circumstances.</td>
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<tr>
<td>Intolerance of anxiety and discomfort</td>
<td>Belief that feeling anxiety or discomfort is bad and may have harmful consequences.</td>
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<tr>
<td>Intolerance for uncertainty, newness, and change</td>
<td>Belief that uncertainty, newness, and change are intolerable because they are potentially dangerous.</td>
<td></td>
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<tr>
<td>Decision-making, doubting</td>
<td>Belief that it is possible to find perfect choices or solutions.</td>
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<tr>
<td>Beliefs about coping</td>
<td>Beliefs about one’s ability to cope with anxiety or discomfort.</td>
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<tr>
<td>Lack of confidence in memory and other</td>
<td>Beliefs about the reliability of one’s memory and other senses.</td>
<td></td>
</tr>
<tr>
<td>Other sense</td>
<td>Beliefs reflecting an excessive tendency to derive a general conception or principle from insufficient particulars; e.g. “If I do something dangerous once, then that means I can't trust my judgment”.</td>
<td></td>
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<tr>
<td>Overgeneralization</td>
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</table>
LEVELS OF MEASUREMENT

Before attempting to develop measures of OC-related beliefs, we sought to determine the types of beliefs to be measured and to distinguish these from other kinds of cognitive phenomena. Mark Freeston outlined a framework for classifying different types of cognitive contents relevant to OCD and related phenomena by drawing on his own work (e.g. Freeston et al., 1996) and that of others (e.g. Salkovskis, 1985, 1989). Based on discussions around this framework, the working group identified the following levels of cognition.

1. **Intrusions**: Unwanted thoughts, images, impulses, etc., that intrude into consciousness and are experienced from time to time by most people (e.g. the doubt, "What if the stove is not turned off?"). Some people report particularly intense, frequent, or distressing intrusions that are subject to negative appraisal and are countered by attempts to remove the intrusion or prevent/undo its perceived consequences. Such intrusions are typically called obsessions and considered one of the defining symptoms of OCD.

2. **Appraisals**: Ways in which meaning is given to a specific event such as the occurrence of an intrusion. Appraisals may take the form of expectations, interpretations or other types of judgments of the event as a function of one or more of several dimensions. These dimensions may include: (a) the importance of, or responsibility for the thoughts (e.g. "Having this thought means it might be true"); (b) the probability, importance of, or responsibility for the event happening (e.g. "The house might catch fire and I would be to blame"); and (c) the obligation to act in a particular way to prevent the event happening or to undo its consequences (e.g. "I should/need to check the stove until I am sure it is off"). Appraisals may be measured in a number of different ways including inventories of thoughts that may occur in response to intrusions, judgments about the likelihood of expected consequences, and ratings of perceived responsibility in relation to the event.

3. **Assumptions (beliefs)**: Relatively enduring assumptions that are held by an individual and that are pan-situational rather than specific to a particular event. These assumptions are typically measured in the form of dysfunctional attitudes or irrational beliefs. It may be possible to distinguish between assumptions of different specificity to OCD that may include: (a) Specific assumptions that are highly-relevant to OC phenomena and/or highly characteristic of OCD. They may not be limited to people with OCD; they may also be found in people at risk of developing OCD (e.g. "If I think about something and do not act to prevent it, then that is as bad as willfully doing it"); (b) General assumptions about oneself or one's identity that are relevant to OCD. These beliefs are not specific to OCD and may be found in other clinical disorders, such as other anxiety disorders or mood disorders (e.g. "I am responsible for preventing bad things from happening").

Appraisals are hypothesized to be involved in the perception of threat (cf. Lazarus, 1966). The different levels of assumptions are hypothesized to interact with one another and to influence the contents and processes of appraisal (cf. Beck & Emery, 1985). Thus, appraisals are derived, in part, from one's beliefs.

A number of important issues are raised by this classification scheme. The first concerns whether or not the distinctions among levels can be reliably made in most cases of OCD. This is an empirical question that requires investigation. A further issue concerns the ways in which the levels can be measured. Three general strategies were identified—self-report, idiographic measurement, and laboratory tasks—and became the focus of subgroup discussions. The outcome of these discussions will be presented later in this paper.

A further question concerns the extent to which the levels of measurement discriminate people with OCD (or people with OC symptoms) from other populations (e.g. normal controls, anxious non-OC controls). By definition, symptom measures (e.g. measures of intrusions) have a high degree of discriminability. There is some evidence for the discriminability of measures of appraisals and of measures of specific beliefs using questionnaire measures developed by Freeston and colleagues (Freeston, Ladouceur, Gagnon & Thibodeau, 1992; Freeston, Rhéaume, Dugas & Ladouceur, 1995). Measures of general beliefs discriminate OCD patients from normal controls, and discriminate high from low scorers on measures of OC phenomena (Freeston, Ladouceur,
Cognitive assessment of OCD


A validation study of 104 participants carried out by Sookman and colleagues (Sookman & Pinard, 1995; Sookman, Pinard & Englesmann, 1997) indicated that their Obsessive–Compulsive Disorder Cognitive Schemata Scale (CSS), designed to measure core dysfunctional beliefs characteristic of OCD, discriminated people with OCD from two groups of normal controls. The scale also discriminated people with OCD from people with non-OCD anxiety disorders and mood disorders. Thus, it appears that OCD is characterized by some types of dysfunctional beliefs. However, it is likely that there are many classes of dysfunctional beliefs that will not discriminate OCD from other psychiatric disorders; e.g. general beliefs about one’s worth as a person (for further examples, see Beck & Emery, 1985; Beck, Rush, Shaw & Emery, 1979).

The working group agreed that the most appropriate goal of the group, at least in the short term, was to develop measures of beliefs that distinguish OCD from other disorders. Because contemporary cognitive models (e.g. Salkovskis, 1989) propose that specific beliefs (unlike general beliefs) are necessary to OCD, measures of specific beliefs are likely to be of greatest value in testing theories of OCD. To be most useful in the longer term, however, assessment may need to be broader to include general beliefs.

We thought it important to develop measures that are not confined to the assessment of beliefs about OC symptoms, such as beliefs about obsessions. In other words, the measures should be applicable to people who do not have OCD. Contemporary cognitive models and research indicate that OC beliefs may characterize people who do not have OCD, but are theoretically at risk for developing the disorder (Rachman & de Silva, 1978; Salkovskis, 1985, 1989). Accordingly, we sought to assess beliefs about intrusions (i.e. intrusive thoughts, images, and impulses) and beliefs about other OC-related phenomena, regardless of whether the intrusions or other OC phenomena meet diagnostic criteria for obsessions or compulsions.

Other important issues concern the necessity of distinguishing beliefs from appraisals, avoiding the confound of beliefs and emotions, and the possible need to use priming in the assessment procedure as has been done to assess beliefs in other clinical populations (e.g. Miranda & Persons, 1988). A further question concerns the extent to which appraisals and beliefs change with treatment for OCD. Measures of appraisals and specific beliefs are likely to co-vary with treatment-related changes in OCD symptoms. However, it is unclear whether general beliefs shift with treatment-related reductions in OC symptoms.

**SPECIFIC DOMAINS OF OC BELIEFS**

Members of the working group were asked to review belief-domains that appear most relevant to OCD (Table 2). Five of these domains were later adopted as areas believed to be of central importance to OCD: (1) inflated responsibility; (2) thought-action-fusion and other beliefs concerning the overimportance of the consequences of one’s thoughts; (3) excessive concern about the importance of controlling one’s thoughts; (4) overestimation of the probability and severity of threat; and (5) intolerance for uncertainty. A sixth domain, perfectionism, was later added. It was considered important as a belief domain, but not necessarily exclusive to OCD. These domains as well as aspects of the fixity of beliefs are discussed below.

**Inflated responsibility**

Paul Salkovskis reviewed the literature and recent work on the construct of inflated responsibility. In early formulations of OCD, intrusions were said to cause mood disturbance (i.e. distress or anxiety), which prompted compulsive behaviors intended to alleviate distress (Rachman & Hodgson, 1980). According to Salkovskis’ (Salkovskis, 1985, 1989) cognitive model, an intermediate step, appraisal of the intrusion, determines whether it is followed by mood disturbance and compulsive behavior. This model proposes that the appraisals that lead to OC symptoms are those in which the person regards him or herself as being responsible for the intrusion and for its perceived dangerous consequences. Other researchers also have pointed to the importance of inflated responsibility in OCD (e.g. Freeston *et al.*, 1996; Rachman, 1993). Appraisals of excessive
personal responsibility arise from dysfunctional assumptions (responsibility beliefs), such as the belief that "If one has any influence over an aversive event, then one has complete responsibility for preventing the event". Thus, the occurrence of an intrusive thought about a possible future harm is appraised by the person with OCD as indicating that he or she is responsible for preventing the harm.

Another component of inflated responsibility is the notion that errors of omission are as bad as errors of commission, especially if one can foresee the possibility of harm. This belief represents an absence of the attributional bias seen in normal people, who believe that they are more culpable for errors of commission than for errors of omission (Spranca, Minsk & Baron, 1991).

Salkovskis (1992) has developed a measure of responsibility, which was found to discriminate people with OCD from people with other anxiety disorders, thereby supporting his model. Salkovskis also developed a measure of responsibility appraisals which may be more sensitive to treatment-related change. Priming by inducing anxiety may be a useful strategy for assessing naturally occurring appraisals of responsibility.

**Overimportance of thoughts**

Josee Rhëaueme discussed the role of beliefs about the overimportance of thoughts, in which the mere presence of a thought appears to give it status. Such beliefs include: "I think about a thought because it is important, and it is important because I think about it"; and "If I think about it, it means I want it to happen; it reveals my true nature". Implicit here is responsibility for one's thoughts and for their consequences. Preliminary research suggests that decreases in the strength of beliefs about the importance of thoughts is accompanied by reductions in the frequency of obsessions (Rhëaueme et al., 1997).

Roz Shafran and Dana Thordarson presented recent work on a related concept, called thought–action fusion (TAF: Rachman, 1993; Salkovskis, 1985), which has two related components: Moral TAF and Likelihood TAF. Moral TAF reflects the belief that thoughts are morally equivalent to actions (i.e. thinking is as bad as doing). Likelihood TAF reflects the belief that thinking about something increases its likelihood of occurrence, either to oneself or to others. Recent studies provide some support for the role of TAF in OCD, and suggest it may occur in normal people. Moral TAF was found to be higher in people with OCD than in students in one study, but not in another (Rachman, Thordarson, Shafran & Woody, 1995; Shafran, Thordarson & Rachman, 1996). Rachman, Shafran, Mitchell, Trant and Teachman (1996) selected students with high levels of Morality and/or Likelihood TAF and asked them to write the sentence, "I hope that [friend or relative] is in a car accident". This manipulation was found to increase the subjective probability that the event would occur. This suggests that TAF beliefs can be found in student samples and need not be limited to people with OCD.

**Beliefs about the importance of controlling one's thoughts**

David A. Clark and Christine Purdon proposed that one of the core cognitive dysfunctions in OCD concern meta-cognitive beliefs and related processes. Meta-cognitive beliefs are beliefs or assumptions about the form or content of the thoughts and images that occupy the stream of consciousness (i.e. beliefs about mental events: Clark & Purdon, 1993). It was hypothesized that the following features characterize people with OCD: Excessive monitoring for the presence of mental intrusions; belief that these intrusions portend some catastrophe; belief that one is responsible for this harm because of the thoughts; belief that one must control the thoughts to avoid harm and reduce distress (Clark & Purdon, 1993).

Recent evidence suggests that perceived control over (i.e. ability to dismiss) intrusive thoughts is correlated with the frequency of occurrence and emotional intensity of intrusions (Clark & Purdon, 1993). Further, perceived control over upsetting intrusions is best predicted by the belief that the thought might be acted upon or otherwise come true (Clark & Purdon, 1993). This suggests that beliefs about the importance of controlling one's thoughts may arise, in part, from beliefs about the consequences of one's thoughts. For example, if a person believes that bad thoughts inevitably lead to bad deeds, and if he or she also believes that such deeds are unacceptable, then the person is likely to believe that it is very important to control one's thoughts. Note that although
the OC-belief domains are related to one another, they can be conceptually distinguished and may
differ in the psychopathologic correlates. The question of how closely they are related is an
empirical issue that will be investigated by the working group.

Meta-cognitive beliefs such as the belief “One should (and can) exercise control over one’s
thoughts”, could arise as a consequence of having many unwanted intrusions. Such beliefs also
appear to shape the appraisal process, and thereby influence whether or not an intrusion will be
labelled as ‘unwanted’, ‘important’, etc. According to Salkovskis (1989), meta-cognitive beliefs
influence one’s appraisals of intrusive thoughts, and thereby shape the etiology and maintenance
of obsessions and compulsions. Thus, it appears that meta-cognitive beliefs can be consequences
and causes of OC problems.

Self-report measures of beliefs about controlling thoughts have been developed by Freeston et al.
(1993) and by Clark and Purdon (1995a; see Table 1). The latter scale assesses beliefs that it is
important to have complete control over unwanted intrusions, and that complete control is
possible. This scale predicted the frequency of intrusive thoughts, but not the frequency of anxious
or depressive thoughts (Clark & Purdon, 1995b).

**Overestimation of threat**

Randy Frost and Gail Steketee observed that beliefs about harm (generalized expectations about
danger) have two main components: (1) beliefs about the likelihood of aversive events; and (2)
beliefs about the cost (severity or ‘badness’) of the aversive events. Several writers have proposed
that people with OCD or OC symptoms tend to overestimate the probability and cost of aversive
events (e.g. Carr, 1974; Foa & Kozak, 1986; Freeston et al., 1996; Salkovskis, 1985).

Foa and Kozak (1986) suggested that people with OCD have problems with epistemological
reasoning. That is, people with OCD view situations as dangerous until proven safe, whereas most
people assume the opposite. Several empirical studies tend to support an association between OCD
and risk aversion (Freeston, Ladouceur, Rhéaume, Letarte, Bujold, Thibodeau & Gagnon,
1992; Steiner, 1972; Steketee et al., 1996). Recently, Simos, Vaiopoulos, Giouzepas and Parashos
(1995) found that the estimation of the probability of general classes of dangerous events (e.g. traffic
accidents, earthquakes) was uncorrelated with scores on the revised Maudsley Obsessional
Compulsive Inventory. This raises the question of whether OC symptoms are associated with the
overestimation of personal harm, rather than with the overestimation of harm in general. The
overestimation of personal threat also is seen in other anxiety disorders, although people with OCD
can score highest of all (Steketee et al., 1996). Consistent with this, Sookman et al. (1997) found
that patients with OCD, compared to mood-disordered patients and non-OC anxiety disordered
patients, were more likely to endorse dysfunctional beliefs on the CSS subscale labelled
‘vulnerability’. This subscale was designed to assess an excessive sense of personal vulnerability to
danger from internal (feelings) as well as external (illness, accidents) threat.

Beliefs about harm may overlap with other OC belief domains, such as thought-action fusion
(i.e. beliefs that thoughts can cause harm) and perfectionism (e.g. belief that mistakes tend to be
harmful). Related to the overestimation of harm are beliefs about coping ability, low tolerance for
uncertainty and ambiguity, and low tolerance for anxiety and discomfort.

**Intolerance of uncertainty**

It has long been observed that people with OCD often have difficulty making decisions
(e.g. Beech & Liddell, 1974; Guidano & Liotti, 1983; Kozak, Foa & McCarthy, 1987). People with
OC symptoms, compared to controls, appear to be more cautious; they take longer to categorize
objects and more frequently request information to be repeated (e.g. Frost, Lahart, Dugas & Sher,
1988). People with OCD, compared to other groups, also display greater doubt about the
correctness of their decisions (Frost & Shows, 1993).

Decision-making difficulties may arise from beliefs about the need for certainty. Intolerance of
uncertainty is commonly observed in OCD (e.g. Carr, 1974). The question arises as to how these
beliefs relate to other classes of dysfunctional beliefs. For their CSS, Sookman and Pinard
(Sookman & Pinard, 1995; Sookman et al., 1997) defined ‘intolerance of uncertainty’ so as to
include difficulty with ambiguity, newness, and unpredictable change. A principal components
analysis carried out on the 12 subscales of the CSS suggested that intolerance of uncertainty merges
with other OC-related beliefs to form a single factor. In their analyses, Sookman and colleagues found that the following three subscales formed a single factor: (1) vulnerability; (2) response to ambiguity, newness and change; and (3) difficulty with strong affect. Further research on the relationship among domains is needed.

Intolerance of uncertainty, in one form or another, is a feature of disorders other than OCD, such as obsessive–compulsive personality disorder and dependent personality disorder (American Psychiatric Association, 1994). To illustrate, a feature of dependent personality disorder is “difficulty making decisions without an excessive amount of advice and reassurance from others” (American Psychiatric Association, 1994, p. 668). It remains to be seen whether intolerance for uncertainty is associated more strongly with OCD than with other disorders.

Perfectionism

Perfectionism has played a major role in theories of OCD (Mallinger, 1984; McFall & Wollersheim, 1979) and in clinical descriptions of the disorder (Honjo et al., 1989; Rasmussen & Eisen, 1989). Measures of perfectionism, especially measures of excessive concern over mistakes, have been found to be correlated with measures of OC symptoms in non-clinical (Frost, Marten, Lahart & Rosenblate, 1990; Frost, Steketee, Cohn & Greiss, 1994; Rhéaume et al., 1995) and clinical samples (Ferrari, 1995). Also, perfectionism and perfectionistic concern over mistakes have been found to be significantly elevated among OCD patients compared to non-clinical controls (Frost & Steketee, 1997). Other work has linked perfectionism to specific types of OCD symptoms such as checking (Gershuny & Sher, 1995), cleaning (Tallis, 1996), and hoarding (Frost & Gross, 1993).

Fixity of beliefs

The fixity or strength of beliefs is an important variable that applies to each of the OC belief domains. Michael Kozak noted that overvalued ideation (OVI) about feared outcomes has been hypothesized to be of central importance in maintaining OCD. Scales measuring OVI, as used in the DSM-IV field trials, have assessed several dimensions, including fixity (strength of belief), bizarreness (validity of belief), resistance (frequency of attempts to control belief), and controllability of belief (Basoglu, Lax, Kasvikis & Marks, 1988; Foa, Kozak, Goodman, Hollander, Jenike & Rasmussen, 1995). Similar interviewer-rated measures have been recently devised by Eisen, Phillips, Beer, Rasmussen and Baer (1996) and by Neziroglu, Yarura-Tobias, McKay, Stevens and Todaro (1986). These instruments assess the form or structure of beliefs, regardless of belief content. The measures of OC-related beliefs developed by the present working group assess the strength of belief in each of 6 domains. In validating these measures it would be important to determine whether high scores on these scales are associated with high scores on measures of OVI.

METHODS OF COGNITIVE ASSESSMENT

Several subgroups were formed from the working group, charged with the task of reviewing the following: (1) idiographic approaches as they pertain to the assessment of OC beliefs; (2) experimental methods for cognitive assessment; and (3) self-report methods for assessing beliefs.

Idiographic assessment

The purpose of this subgroup was to discuss the use of idiographic measurement strategies in the study of cognitive features of OCD, and to generate ideas on how to apply this methodology. This subgroup identified three strategies for assessing OCD beliefs using idiographic methods. One involves generating a standardized expectancy format (i.e. assessment of beliefs about outcomes), which could be completed by all respondents while retaining the ability to assess idiosyncratic beliefs. In this format the item stem is constant, but the intrusive thought, the expected neutralization, and the consequences are specific to each respondent. To illustrate, it may be possible to include sentence fragments with portions of the sentence to be completed by the respondent (e.g. “If I have the thought that ______ and don’t do ______ then ______ will
happen”). These statements could be rated on various dimensions, such as subjective probability, perceived cost ('badness'), and strength of belief. This method has the flexibility of assessing idiosyncratic beliefs and a further advantage in that ratings on these dimensions can be compared across respondents. In conjunction with this format, ratings could be made by coders to estimate the objective severity of consequences. This would enable one to assess subjective ratings of the initial expectancy, discrepancies between subjective and objective ratings, and treatment-related changes in the expectancy. This format may be used at a very specific or a more general level of expectancy, the first referring to a single thought or situation and the latter referring to a class of thoughts or situations.

A second strategy involves a self-debate measure of the strength of obsessional beliefs. Respondents could be asked to present arguments for and against their specific obsessional beliefs. They could then be asked to rate the degree of conviction they hold for each argument. This could be used before and after treatment.

Finally, a standardized probability rating could be used. As in the catastrophizing assessment of worry developed by Vasey and Borkovec (1992), respondents could first identify the chain of obsessional beliefs leading to a catastrophic outcome and rate the probability of each step in the chain (e.g. using a 0–100 scale). This strategy has already been used in a therapeutic context (e.g. van Oppen et al., 1995).

Idiographic assessment can be used to determine whether (and how) idiosyncratic beliefs change over time. Beliefs may change in conviction or content over time, and other beliefs may emerge as more important. Different wordings of beliefs could reflect different strengths of belief. For instance, the stem “I am convinced that...” may be answered differently than the same belief with the stem “I sometimes worry that...”. Responses to different item stems may be one way to detect subtle changes in belief strength.

An advantage of idiographic measures is that they can detect inconsistencies in belief systems that may not be detected by nomographic measures. For example, a person with OCD might say, “I know that it is not true, but I believe it anyway”. The emergence of such inconsistencies may indicate that changes in beliefs are taking place. Asking recovered patients about how they view their old beliefs may shed light on the processes of cognitive change.

**Experimental and laboratory methods**

The subgroup formed to discuss these methods focused on current laboratory tasks, conceptual and methodological problems encountered therein, and issues for future consideration that might elucidate cognitive contents and processes in people with OCD. Group members reported on their ongoing laboratory projects relevant to the study of cognition in OCD. Paul Salkovskis described laboratory studies of thought suppression, and studies of thought monitoring in obsessional, anxious, and normal controls. Roz Shafran discussed laboratory investigations of responsibility, thought–action fusion manipulations and effects on checking behavior. Jose Yaryura-Tobias described computer-based tasks focused on perceptual differences between OCD patients, other psychiatric populations, and controls. Michael Kozak and Nader Amir outlined ongoing studies coordinated with Andrew Mathews of memory and decision-making. Michael Kyrios outlined his laboratory research using the Cambridge Neuropsychological Test Automated Battery (a computerized neuropsychological test battery), visual tracking tasks, other motor tasks, modified Stroop studies with a focus on automatic and strategic levels of processing, and the influence of cognitive avoidance strategies, and responsibility manipulation tasks using computerized memory and classification tasks.

Laboratory tasks can provide useful measures of cognitive processes, and may shed light on the relationship between these processes and cognitive contents such as beliefs and appraisals. However, several difficulties have been encountered. One involves the heterogeneity of OC-related fears and beliefs, which can create difficulties in generating standardized stimuli in experimental studies. A further problem is that some participants may have difficulty completing laboratory tasks not because of the task *per se*, but because of anxiety, discomfort, or avoidance evoked by contamination fears (i.e. in response to handling test materials or touching response keys). It may be possible to control for this problem by assessing the degree of anxiety or discomfort in touching
laboratory materials. Such ratings then could be taken into consideration (e.g. used as covariates) when studying information processing in OCD.

A further problem concerns the possible effects of experimental studies of inflated responsibility. Such studies involve the manipulation of responsibility over feared outcomes (e.g. responsibility for checking that one's door is locked). Recent studies suggest that responsibility can be successfully manipulated and that participants may experience an increase in anxiety or discomfort during the experiment (e.g. Lopatka & Rachman, 1995). People with severe checking compulsions may find such tasks highly distressing. Fortunately, however, it appears that most people with checking compulsions can experience transient increases in anxiety or discomfort, and no long-term effects have been identified. As in all provocation studies, however, it is important to conduct a thorough post-experiment debriefing.

**Self-report measures**

The self-report working group discussed the components necessary to develop a self-report measure of beliefs and appraisals in OCD, including cultural relevance, format, priming, item specificity, and psychometric testing. A number of suggestions for item wording were made. There was consensus that approximately 25% of the items should be worded to indicate healthy responding to reduce response bias. 'I' and 'me' wording in present tense was considered important to ensure that items are evaluated for relevance to the individual completing the form, rather than general beliefs about people. Wording such as “I feel...” and “I worry that...” should be avoided to prevent confounding of emotional state and other conditions like worries with beliefs and attitudes. Sentences should be short with simple language that includes only one idea per item, and items should be worded to encourage Ss to use the full range of scaling.

A 7-point scale ranging from −3 (‘disagree very much’) to +3 (‘agree very much’) was preferred over a true/false response option, and this format was thought to be easiest for respondents to use. An alternative form of this instrument to be developed later could employ a 0–100 scale to rate the strength of particular beliefs. The length of the measure will depend on the number of belief domains, but hopefully the entire instrument would contain fewer than 100 items in its final version.

To enable researchers to use the instrument on both OCD and non-OCD populations, working group members agreed that a scale assessing appraisals of intrusions needed to include a definition and examples of intrusive thoughts in order to distinguish OCD-like intrusions from worries and pleasurable ideas. The instructions should therefore give examples of the types of OCD-like intrusions of interest, as well as those that are not of interest. To this end, Ss might be asked to record their own types of intrusive thoughts and to keep these in mind as they respond to the questionnaire items. All questionnaire items would be reviewed by working group members for relevance to the cultural backgrounds of likely Ss from their centers. Translations will be needed from research centers with non-English-speaking research participants, with back-translations to verify accuracy of meaning.

**OC Belief Domains: Consensus Ratings of Major Categories**

The working group devoted a great deal of time to identifying major domains of OC beliefs and developing items to assess each domain. The measures used as sources of items are listed in Table 1, and the 19 OC belief domains considered for inclusion in a self-report beliefs measure are presented in Table 2. These domains were identified by a review of the contents of the self-report measures, and by reviewing the relevant literature (e.g. Carr, 1974; Rachman & Hodgson, 1980; Salkovskis, 1989). A study by Sookman et al. (1997) suggests that many of these domains may discriminate people with OCD from people with other disorders and normal controls. However, some domains (e.g. inflated responsibility) appear to be theoretically more central to OCD than other domains (e.g. perfectionism), and may be better at discriminating OCD from other disorders (cf. Clark & Purdon, 1993; Freeston et al., 1993; Salkovskis, 1989). This requires further study. As Sookman and Pinard (1995) pointed out, different belief domains may be particularly important for different subgroups of OCD patients (e.g. checkers vs washers).

The 19 domains were ranked independently by members of the working group for the extent
to which they represented OC-related beliefs. Each member made two rankings. The first was for OC-specific domains, defined as beliefs that are commonly observed in people with OCD, and less commonly found in other populations. It was not required that such beliefs should be absent in other populations, because they were hypothesized to be vulnerability factors that could lead to the development of OCD. For the second ranking, members ranked domains in terms of their theoretical importance as etiologic factors in OCD, regardless of whether the beliefs were specific to OCD or also might be found in other disorders. For each set of rankings, raters were instructed to assign high rankings (low numbers) to domains that appeared to be better descriptions of OC-related beliefs. Domains that were thought to overlap in content were assigned tied ranks.

Six sets of domains (termed major domains) were identified, 5 of which are similar to the main classes of beliefs previously proposed by Freeston et al. (1996). These are shown in Table 3. The table also shows that some domains were omitted because they were considered to be insufficiently specific to OCD. These are listed as minor domains. These domains were designated as 'major' and 'minor' on the basis of theory, available evidence, and clinical experiences of the working group. Further empirical efforts are needed to determine the accuracy of our classification. As a starting point, we decided to construct self-report measures of the 6 major domains, and to develop a self-report measure of appraisals of intrusions. Regarding the assessment of beliefs, the working group was divided into 6 subgroups, one for each major belief domain. The aims of the subgroups were to: (1) develop a definition of the assigned domain; (2) generate up to 20 self-report items to measure it; and (3) generate specific hypotheses to be tested about the domain. Definitions and items typical of the major domains are given below.

### Inflated responsibility

This domain was defined as the belief that one has power which is pivotal to bring about or prevent subjectively crucial negative outcomes. These outcomes are perceived as essential to

<table>
<thead>
<tr>
<th>Domain number</th>
<th>Belief categories and domains</th>
<th>Mean ranking of importance of domains</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>As an OCD specific belief</td>
</tr>
<tr>
<td>I. Inflated responsibility</td>
<td></td>
<td>3.57</td>
</tr>
<tr>
<td>II. Overimportance of thoughts</td>
<td></td>
<td>4.80</td>
</tr>
<tr>
<td>III. Excessive concern about the importance of controlling one's thoughts</td>
<td></td>
<td>5.46</td>
</tr>
<tr>
<td>IV. Overestimation of threat</td>
<td></td>
<td>4.69</td>
</tr>
<tr>
<td>V. Intolerance of uncertainty</td>
<td></td>
<td>8.88</td>
</tr>
<tr>
<td>VI. Perfectionism</td>
<td></td>
<td>9.57</td>
</tr>
<tr>
<td>VII. Consequences of anxiety</td>
<td></td>
<td>11.92</td>
</tr>
</tbody>
</table>

### Minor domains not included in Beliefs Questionnaire

<table>
<thead>
<tr>
<th>Domain number</th>
<th>Belief categories and domains</th>
<th>Mean ranking of importance of domains</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>As an OCD specific belief</td>
</tr>
<tr>
<td>12</td>
<td>Rigidity: follows rules strictly</td>
<td>12.30</td>
</tr>
<tr>
<td>13</td>
<td>Control over life circumstances</td>
<td>13.19</td>
</tr>
<tr>
<td>18</td>
<td>Lack of confidence in memory and other senses</td>
<td>13.30</td>
</tr>
<tr>
<td>17</td>
<td>Beliefs about coping</td>
<td>13.34</td>
</tr>
<tr>
<td>19</td>
<td>Overgeneralization</td>
<td>17.19</td>
</tr>
</tbody>
</table>

Note:
1. Smaller numbers indicate high rankings of importance to OCD.
2. Rankings for 'specific beliefs' refer to importance of domains as OCD-specific beliefs.
3. Rankings for 'general beliefs' refer to importance of domains as non-specific beliefs (i.e. beliefs found in OCD and other disorders).
4. Minor domains were regarded as not sufficiently specific to OCD, and therefore omitted from the OC beliefs scales.
prevent. They may be actual, that is, having consequences in the real world, and/or at a moral level. Such beliefs may pertain to responsibility for doing something to prevent or undo harm, and responsibility for errors of omission and commission. Representative beliefs of inflated responsibility are as follows: “I often think I am responsible for things that go wrong”; “If I don’t act when I foresee danger, I am to blame for any bad consequences”; “To me, not acting to prevent a possible disaster is as bad as causing it”; “When I hear about a tragedy, I can’t stop thinking that I am responsible”; and “Not preventing harm is the same as causing harm”.

Overimportance of thoughts

This was defined as the belief that the mere presence of a thought indicates that it is important. Included in this domain are beliefs that reflect thought-action fusion and magical thinking. The overimportance of thoughts is reflected in beliefs such as “My intrusive thoughts reflect my true nature”; “Having a bad thought is the same as doing a bad deed”; “If an intrusive thought pops into my mind, it must important”; “Having an unwanted thought means I really want to do it”; “Thinking about something bad makes it more likely to happen”; “Having bad thoughts means I’m weird or abnormal”; and “Having violent thoughts means I will lose control and become violent”.

Excessive concern about the importance of controlling one’s thoughts

This domain reflects the overvaluation of the importance of exerting complete control over intrusive thoughts, images, and impulses, and the belief that this is both possible and desirable. Four subdomains were defined: (1) Beliefs about the importance of tracking and being hypervigilant for mental events; (2) beliefs about the moral consequences of not controlling thoughts; (3) beliefs about the psychological and behavioral consequences of failure to control thoughts; and (4) beliefs about the efficiency of control, i.e. beliefs that one’s efforts at thought control should meet with success, especially long-term success. Sample items are as follows: “I must know what’s going on in my mind at all times so I can control my thoughts”; “I would be a better person if I gained control over my thoughts”; “Having intrusive thoughts means I’m out of control”; “I should be able to gain complete control of my mind if I exercise enough will power”.

Overestimation of threat

This domain reflects an exaggeration of the probability or severity of harm. Examples include, “I believe that the world is a dangerous place”; “Bad things are more likely to happen to me than to other people”; and “Small problems always seem to turn into big ones in my life”.

Intolerance of uncertainty

Three types of beliefs pertain to intolerance of uncertainty: (1) beliefs about the necessity for being certain; (2) beliefs that one has a poor capacity to cope with unpredictable change; and (3) beliefs about the difficulty of adequate functioning in inherently ambiguous situations. Representative beliefs are as follows: “It is possible to be absolutely certain about the things I do if I try hard enough”; “I must be certain about the answers to questions that concern me before I can put them to rest”; “I cannot tolerate uncertainty”; and “If I’m not absolutely sure of something, I’m bound to make a mistake”.

Perfectionism

Perfectionism with respect to OCD was defined as the tendency to believe there is a perfect solution to every problem, that doing something perfectly (i.e. mistake free) is not only possible, but also necessary, and that even minor mistakes will have serious consequences. Beliefs which reflect these features of perfectionism include, “It is important to keep working at something until it’s done just right”; “For me, failing partly is as bad as failing completely”; “Even minor mistakes mean a job is not complete”; and “It is okay if I make mistakes in my work”.
DEVELOPMENT OF SCALES

The working subgroups identified items for each major belief domain, drawing on existing scales and generating new items. The format for the new scales follows that of the Dysfunctional Attitudes Scale (Weissman, 1979) using the criteria described earlier for self-report scales from the working subgroup. The question arose as to whether beliefs should be primed, that is, by specifying the context for which respondents are to make their ratings (e.g. “When you are feeling anxious, how much would you agree with the following statements?...”). There was general agreement that priming is important in assessing appraisals, for example, by asking Ss to rate the frequency of appraisals that occur when they have an unwanted intrusive thought. Some members of the working group suggested that priming may not be necessary for assessing beliefs, because the latter are more likely to be maintained across a variety of situations. However, anxiety-disordered people often display seemingly dual belief systems, where danger-related beliefs are accessed or ‘activated’ in subjectively threatening situations (Beck & Emery, 1985). Moreover, there are cases where priming might be important (e.g. to activate ‘latent’ beliefs in asymptomatic people who are at risk for an occurrence or re-occurrence of OC symptoms). The pros and cons of priming were discussed, although at this stage it is unclear whether or not priming will be used.

DISSEMINATION OF FINDINGS AND CONCLUSIONS

An international group of researchers has worked collaboratively and productively to accomplish several goals: (1) a review of existing theoretical issues and measures of OC beliefs; (2) a review of pertinent methodological issues; (3) specification and refinement of major domains of OC-related beliefs; and (4) initial steps toward the development and evaluation of self-report measures of OC-related cognition. Work has continued regarding further development of two self-report instruments that will be available for psychometric evaluation. These include a questionnaire to assess beliefs in OCD (as described above) and an inventory to measure appraisals of intrusions. Investigators interested in obtaining copies of current versions of these scales should contact either of the co-chairs of the working group. Self-report, idiographic, and laboratory measures of cognition in OCD are needed to further our understanding of OC phenomena and treatment-related change. Insights in these areas may eventually contribute to advances in the treatment of OCD. It is our hope that our collaborative efforts will advance the study of OCD-related cognition more rapidly than would have otherwise occurred.

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