Psychological Assessment
2010, Vol. 22, No. 2, 396–406

1040-3590/10/$12.00 DOI: 10.1037/a0019230

The Intolerance of Uncertainty Index: Replication and Extension With an English Sample

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Intolerance of uncertainty (IU) is related to anxiety, depression, worry, and anxiety sensitivity. Precedent IU measures were criticized for psychometric instability and redundancy; alternative measures include the novel 45-item measure (Intolerance of Uncertainty Index; IUI). The IUI was developed in French with 2 parts, assessing general unacceptability of uncertainty (15 items, Part A) and manifestations of uncertainty approximating more common anxiety disorder symptoms (30 items, Part B). The psychometric stability of the back-translated English items of the IUI as well as the incremental variance of Parts A and B remain to be assessed. The current study involved 2 samples of English-speaking community participants ($n = 437$ and $n = 309$; 73% women and 27% men) who completed the IUI and several related measures. Exploratory and confirmatory factor analyses suggested a refinement of IUI items as well as a unitary structure for Part A and a 3-factor structure for Part B. Regression results suggested Parts A and B each provide incremental validity in measures of worry, generalized anxiety disorder symptoms, negative problem orientation, and depression. Comprehensive results, implications, and future research directions are discussed.

Keywords: intolerance of uncertainty, Intolerance of Uncertainty Index, worry, depression, factor analysis

Fear functions as a basic, adaptive, protective response, accompanied by a strong physiological reaction to a current and identifiable negative event; in contrast, anxiety is a complex, cognitive, and physiological preparatory response, accompanied by an attenuated version of the physiological reaction to fear, to a potentially negative event that is as of yet not completely identified or realized (Barlow, 2002). Anxiety necessarily includes a degree of uncertainty because the negative event has not yet occurred. Uncertainty itself can be considered negative and threatening (Epstein, 1972), therein promoting or maintaining anxiety and exacerbating the perception of threat (Hadjistavropoulos, Craig, & Hadjistavropoulos, 1998; Heydayati, Dugas, Buhr, & Francis, 2003; Hock & Krohne, 2004). The association between anxiety and uncertainty may be critical (Carleton, Sharpe, & Asmundson, 2007) and has been exemplified in recent research on anxiety sensitivity and intolerance of uncertainty (IU).

Anxiety sensitivity is defined as the propensity of a person to appraise anxiety-related somatic sensations (e.g., increased heart rate, palpitations, trembling), cognitive changes (e.g., difficulty concentrating, racing thoughts), and social consequences (e.g., humiliation, rejection) on the basis of expectations of harmful consequences (Reiss & McNally, 1985; Taylor, 1999). IU has been characterized as the tendency for an individual to consider the possibility of a negative event occurring as unacceptable and threatening irrespective of the probability of its occurrence (Carleton, Norton, & Asmundson, 2007; Freeston, Rhéaume, Letarte, Dugas, & Ladouceur, 1994). However, the definition of IU has come under scrutiny, with some researchers suggesting that separate constructs of intolerance of uncertainty and intolerance of ambiguity may provide additional utility (Grenier, Barrette, & Ladouceur, 2005). For persons who are intolerant of uncertainty, engaging in situations with uncertain outcomes is likely to induce and perpetuate a heightened level of anxiety (Dugas, Gosselin, & Ladouceur, 2001); moreover, anxiety sensitivity has been suggested as being causally dependent on IU (Carleton, Sharpe, & Asmundson, 2007). People with high IU are more likely to interpret all ambiguous information as threatening (Heydayati et al., 2003), somatic or otherwise, therein exacerbating their arousal (Greco & Roger, 2001, 2003), which serves to facilitate self-perpetuating cycles of fear (Barlow, 2002).

Given the potential implications of the IU construct for anxiety and anxiety disorders (Barlow, 2002; Carleton, Sharpe, & Asmundson,

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R. Nicholas Carleton was supported by a Canadian Institutes of Health Research (CIHR) Graduate Scholarship Doctoral Research Award (FRN: 80455). Gordon J. G. Asmundson was supported by a CIHR Investigator's Award (FRN: 63186).

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2007), measurement of IU has become an important issue. Indeed, IU appears to be related to general anxiety (Beck, Epstein, Brown, & Steer, 1988), depression (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), and worry (Meyer, Miller, Metzger, & Borkovec, 1990; Tallis, Eysenck, & Mathews, 1992), and it accounts for variance in worry over and above variance shared with anxiety and depression. IU has been particularly useful in understanding aspects of generalized anxiety disorder (GAD) and obsessive compulsive disorder (Dugas, Gosselin, & Ladouceur, 2001; Holaway, Heimberg, & Coles, 2006) and has recently drawn attention from researchers investigating panic disorder (Dugas, Marchand, & Ladouceur, 2005; Simmons, Matthews, Paulus, & Stein, 2008) and social anxiety disorder (Carleton, Collimore, & Asmundson, 2010). Researchers have demonstrated that IU is significantly higher in patients with GAD relative to patients with panic disorder with agoraphobia without comorbid GAD (Dugas et al., 2005). Similarly, IU has been shown to account for as much or more variance in social anxiety as accounted for by fear of negative evaluation. Such results support the notion of important differential levels of IU across the anxiety disorders (Carleton, Sharpe, & Asmundson, 2007).

The Intolerance of Uncertainty Scale (IUS; Freeston et al., 1994) is the most popular measure of the IU construct. Alternative measures include the longer Uncertainty Response Scale (Greco & Roger, 2001), the Intolerance of Ambiguity Scale (Budner, 1962), and the Tolerance of Ambiguity Scale (Kirton, 1981), which have test scores that demonstrate relatively lower internal reliability and convergent validity. The IUS was developed in French to assess reactions to ambiguous situations, uncertainty, and future events (Freeston et al., 1994). The final 27-item five-factor solution (i.e., Unacceptability and Avoidance of Uncertainty, Negative Social Evaluation Caused by Uncertainty, Uncertainty-Related Frustration, Uncertainty Causes Stress, and Uncertainty Preventing Action) was derived using factor analyses from a larger list wherein irrelevant or redundant items were removed using rational relatedness, discriminant, and correlational validations. Subsequent research (Buhr & Dugas, 2002) suggested a 27-item four-factor solution in a back-translated English version of the IUS (i.e., Uncertainty Leading to Inability to Act, Uncertainty Being Stressful and Upsetting, Unexpected Events Are Negative and Should Be Avoided, and Uncertainty Being Unfair), as well as extremely divergent 27-item five- and six-factor solutions with extensive multivocal item loadings and poor interpretability (Norton, 2005). Support has also been found for a two-factor solution; however, the high alpha coefficients and interitem correlations remained (Sexton & Dugas, 2009). It was the high alpha coefficients reported with the IUS (Buhr & Dugas, 2002; Freeston et al., 1994) that led to the suggestion that item removal might improve the factor structure of the IUS without substantively impacting the reliability or construct validity of the test scores (Norton, 2005). Accordingly, the IUS was reassessed using the current best practices for factor analysis (Osborne, 2008), resulting in a shortened 12-item two-factor solution (i.e., IUS–12; Prospective Anxiety and Inhibitory Anxiety) with improved psychometric validity (Carleton, Norton, & Asmundson, 2007).

Most recently, researchers have developed a new measure of IU, again in French, but this time back-translated into English by the original authors (Gosselin et al., 2008). Participants were undergraduate French Canadians who were presented with French versions of the measure. The final measure included 45 items divided into two parts. Part A (15 items) assessed a more general unacceptability of uncertainty, whereas Part B (30 items) assessed manifestations of uncertainty that approximate more common symptoms within anxiety disorders. The intent for Part A of the IUI was to reduce the possibility of a biased link between IU and GAD, which might arise from overlap in question content from the IUS. Furthermore, Part A was intended to improve evaluation of the tendency to find uncertainty unacceptable, rather than only measuring reactions to—or behaviors associated with—uncertainty. In contrast, the intent for Part B was to evaluate manifestations of IU. The measure of general uncertainty (i.e., Part A) was represented either as a unitary construct (i.e., Intolerance of Uncertainty), a two-factor construct (i.e., Intolerance of Uncertainty and of Uncertain Situations; and Intolerance of the Unexpected and Difficulty Waiting in an Uncertain Situation), or a three-factor construct (i.e., Intolerance of Uncertainty and of Uncertain Situations; Intolerance of the Unexpected; and Difficulty Waiting in an Uncertain Situation); however, the three-factor solution included a factor with only two items. The manifestations were represented in Part B as six distinct subscales (i.e., Avoidance, Doubt, Overestimation, Worry, Control, and Reassurance) that were derived from a larger list wherein irrelevant or redundant items were removed using factor analysis, rational relatedness, discriminant, and correlational validations. The factor analytic process used principle components analyses, varimax rotation, eigenvalues > 1, and Cattell's scree test, rather than procedures endorsed as producing the most robust factor analytic results (i.e., principle axis factoring, promax rotation, parallel analysis; Osborne, 2008); however, the authors supported their solution with a confirmatory factor analysis which suggested good but not excellent model fit (Browne & Cudeck, 1993; Gosselin et al., 2008). Across both Parts A and B, results indicated high reliability among test scores ($\alpha = .86$ to .96) and interitem correlations ($r = .43$ to .80), good 5-week test–retest reliability among test scores ($r = .66$ to .76), and moderate to large correlations with the IUS ($r = .46$ to .72), reports of worry ($r = .38$ to .71), and depression symptoms ($r = .28$ to .56).

The promising initial psychometric properties of the IUI indicate the measure warrants reevaluation using the English version in an English-speaking community sample. Moreover, the additive contribution of the manifestation items in Part B to other constructs relative to Part A remains to be explored, specifically, how the manifestation subscales contribute incremental validity—a critical issue for scale development (Hunsley & Meyer, 2003)—to the variance in measures of worry, GAD symptoms, negative problem orientation, and depression. Such contributions may be of particular importance given precedent concerns surrounding longer measures of IU (Carleton, Norton, & Asmundson, 2007; Norton, 2005).

Method

Participants

The current investigation included two samples. In neither sample were participants assessed diagnostically for full or subsyndromal psychopathologies. The first sample comprised English-speaking community members from Quebec (120 men, 22–59 years, M_{age} = 45.2, SD = 8.5; and 317 women, 21–60 years, M_{age} = 42.79, SD = 8.1) who completed Parts A and B of the IUI along with several questionnaires as part of a larger study approved by the University Research Ethics Board. All of the participants reported being native English speakers who spoke English as the main language in their home. Approximately 60% reported being bilingual, with their second language being French. Most participants identified their nationality as North American (96%). Most participants also reported having at least some postsecondary education (86%), and most reported being employed full time (99%). Regarding marital status, 10% reported being single, 30% reported being common-law married, and 50% reported being married. The second sample included English-speaking community members from across Canada (85 men, 18–54 years, M_{age} = 29.9, SD = 10.9; and 224 women, 18–55 years, M_{age} = 30.4, SD = 10.9) who completed Part B of the IUI as part of a larger study approved by the University Research Ethics Board. Participant recruitment was based on community members volunteering to participate in an investigation of the psychology associated with fear as advertised through Web-based marketing. Most participants identified their nationality as North American (94%). Most participants also reported having at least some postsecondary education (70%), and most reported being employed full time (36%) or part time (19%) or being students (36%). Regarding marital status, 36% reported being single and 50% reported being married or common-law married.

Measures

Intolerance of Uncertainty Index (IUI; Gosselin et al., 2008). The IUI is a new 45-item instrument proposed to measure manifestations of IU, including reactions to uncertainty, ambiguous situations, and the future. Items are scored on a 5-point Likert scale ranging from 1 (*not at all characteristic of me*) to 5 (*entirely characteristic of me*). The scale comprises two parts, with Part A (15 items) assessing more general unacceptability of uncertainty and Part B (30 items) assessing manifestations of uncertainty that approximate more common symptoms within anxiety disorders. For test scores from the two current samples (results presented as the first sample/the second sample), Part A internal consistency for the total score was acceptable (α = .94/not available) and the average interitem correlation was .52. Part B internal consistency was acceptable for the total score (α = .97/α = .98), the Avoidance subscale score (α = .87/α = .92), the Doubt subscale score (α = .92/α = .93), the Overestimation subscale score (α = .94/α = .96), the Worry subscale score (α = .91/α = .91), the Control subscale score (α = .90/α = .95), and the Reassurance subscale score (α = .88/α = .91). The average interitem correlation for the first sample was .48 and for the second sample was .60. The Cronbach's alphas and average interitem correlations from the current sample, like those from the original sample (Gosselin et al., 2008), further support the potential utility of an additional exploratory factor analysis for the IUI.

The Worry and Anxiety Questionnaire (WAQ; Dugas, Freeston, et al., 2001). The WAQ is an 11-item self-report measure that assesses symptoms of GAD (e.g., "Do your worries seem excessive or exaggerated?"). Items are scored on a 9-point Likert scale ranging from 0 (*not at all typical*) to 8 (*very typical*). Test scores on WAQ have demonstrated satisfactory test–retest reliability (Dugas, Freeston, et al., 2001) and are considered to have good diagnostic sensitivity and specificity for GAD (Belleville, Bélanger, Ladouceur, & Morin, 2008). For the current sample test scores, the internal consistency was acceptable (α = .93) and the average interitem correlation was .59.

Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990). The PSWQ is a 16-item self-report measure that assesses the frequency, intensity, and controllability of worry (e.g., "I am always worrying about something"). Items are scored on a 5-point Likert scale ranging from 1 (*not at all typical*) to 5 (*very typical*). Test scores on the PSWQ have demonstrated good internal consistency in clinical and undergraduate samples (all αs $>$ .86), with acceptable 1-month test–retest reliability (r = .93) in undergraduate samples (Brown, Antony, & Barlow, 1992; Meyer et al., 1990). Patients diagnosed with GAD report higher PSWQ scores relative to participants without GAD and patients with other anxiety disorders (Brown et al., 1992). For the current sample test scores, the internal consistency was acceptable (α = .93) and the average interitem correlation was .46.

The Negative Problem Orientation Questionnaire (NPOQ; Gosselin, Pelletier, & Ladouceur, 2000; Robichaud & Dugas, 2005). The NPOQ is a 12-item self-report measure that assesses the dysfunctional cognitive set of negative problem orientation (e.g., "I often see problems as bigger than they really are"). Items are scored on a 5-point Likert scale ranging from 1 (*not at all true of me*) to 5 (*extremely true of me*) based on how participants believe they react or think when confronted with a problem. Test scores on the NPOQ have been shown to be unifactorial with acceptable internal consistency (α = .90 to .92), test–retest reliability (r = .80), and convergent and discriminant validity with other test scores (Gosselin, Pelletier, & Ladouceur, 2001; Robichaud & Dugas, 2005). For the current sample test scores, the internal consistency was acceptable (α = .93) and the average interitem correlation was .39.

The Beck Depression Inventory–II (BDI–II; Beck, Steer, & Brown, 1996; Beck et al., 1961). The BDI–II is a 21-item self-report rating scale that measures the existence and severity of depression criteria (American Psychiatric Association, 1994, 2000). All but two of the items are rated using a 4-point Likert scale ranging from 0 (e.g., *"I do not feel sad"*) to 3 (e.g., "*I am so sad or unhappy that I can't stand it*") and the final two items (i.e., "changes in sleeping pattern," "changes in appetite") include additional response options so as to identify the direction (increase, decrease) of behavior change. Test scores on the BDI–II indicate acceptable internal consistency (α = .92 and .93), 1-week outpatient test–retest reliability (r = .93), and convergent and discriminant validity (Beck, Steer, Ball, & Ranieri, 1996; Steer, Ball, Ranieri, & Beck, 1999). For the current sample test scores, the internal consistency was acceptable (α = .93) and the average interitem correlation was .39.

Analyses

Descriptive statistics were calculated for each item of the IUI from each of the two samples. Descriptive statistics were also calculated for the subscales from each measure for the first and second samples. These values are presented in Tables 1 and 2. For initial comparison purposes only, the subscale and total scores of men and women from the first sample were compared with t tests

Table 1
Part A Descriptive Statistics and Factor Loadings, First Sample (n = 437)

Item	*M* (*SD*)	*S*	*K*	Factor loading
1. I have difficulty accepting that the future is uncertain	2.17 (1.11)	0.82	−0.04	.64
2. I find it unbearable to not have guarantees in life	1.82 (1.00)	1.19	0.81	.70
3. Others seem to better tolerate uncertainty than me	1.82 (1.08)	1.26	0.87	.69
4. I find it intolerable that certain aspects of life are not determined in advance	1.54 (0.82)	1.57	2.16	.74
5. I have difficulty tolerating the possibility that a negative event may happen to me	2.04 (1.03)	0.91	0.20	.74
6. When I am waiting for important news, I find it hard to remain in the dark	2.54 (1.10)	0.59	−0.34	.71
7. I find it intolerable to have to deal with unpredictable situations	1.76 (0.84)	1.16	1.30	.73
8. I do not really tolerate situations in which I do not know what is going to happen	2.05 (0.91)	0.76	0.25	.77
9. Not knowing what will happen in advance is often unacceptable for me	1.68 (0.86)	1.25	1.16	.79
10. Waiting periods are unbearable for me when I do not know what is going to happen	2.03 (0.92)	0.80	0.35	.77
11. I have difficulty tolerating life's uncertainties	1.78 (0.85)	1.22	1.77	.85
12. When I think that something negative might happen, I have difficulty remaining in uncertainty	2.24 (0.97)	0.79	0.48	.76
13. I would rather know everything right away rather than remain uncertain	2.57 (1.25)	0.48	−0.75	.57
14. I have difficulty dealing with the possibility that something unexpected may occur	1.77 (0.89)	1.17	1.08	.80
15. I need to be sure of what I take on	2.52 (1.00)	0.55	−0.06	.64
IUI–A total	30.33 (10.87)	1.00	0.80	

Note. IUI–A = Intolerance of Uncertainty Index—Part A; S = skew (SE = 0.12); K = kurtosis (SE = 0.23).

to those in the second sample (see Table 3), and those were compared to the undergraduate responses as presented in the original IUI study (Gosselin et al., 2008). Thereafter, subscale response differences between men and women were assessed for each of the first and second samples (see Table 3). The comparisons were presented as statistically significant at $p < .05$ following a Bonferroni correction of $p < .00122$.

An initial confirmatory factor analysis (CFA) was conducted with data from the first sample in order to assess the precedent posited IUI factor structures. The model was evaluated using the following fit indices and 90% confidence intervals (where applicable): (a) the chi-square statistic (values should not be significant), (b) the chi-square/*df* ratio (values should be < 2.0), (c) the comparative fit index (CFI; values should approach or be greater than .95), (d) the standardized root-mean-square residual (SRMR; values should approach or be less than .08), (e) the root-mean-square error of approximation (RMSEA; values should approach or be less than .06), and (f) the expected cross-validation index (ECVI; lower values indicate a closer fit; Browne & Cudeck, 1989, 1993). Goodness-of-fit evaluations should emphasize the latter four fit indices because of potential chi-square inflation (Hu & Bentler, 1999). Multivariate normality was assessed using Mardia's coefficient of multivariate kurtosis (Byrne, 2001) for all models, with results suggesting nonnormal data; however, parameter estimates and most model fit indices are robust to nonnormality given maximum-likelihood estimation and a sample size of 100 or more participants (Lei & Lomax, 2005). Nonetheless, we used the Bollen-Stine bootstrap chi-square and computed bootstrapped parameter estimates with estimates from a maximum-likelihood procedure (Byrne, 2001; Nevitt & Hancock, 2001). In all cases, the Bollen-Stine bootstrap results supported the results from the maximum-likelihood procedure.

The relatively incongruent fit along with the high interitem and interfactor correlations prompted us to conduct two follow-up exploratory factor analyses (EFAs) on each of the IUI Part A and Part B item responses using current recommended procedures and data from the first sample (Osborne, 2008). Specifically, EFAs were performed using principal axis factoring with promax rotation. Initial factor structures were assessed with parallel analysis (Longman, Cota, Holden, & Fekken, 1989), eigenvalues > 1, and Cattell's scree test. The intent was to identify the primary factors and eliminate items not meeting Osborne's criteria—items with initial communalities < .40, factor loadings < .50, or cross-loadings ≥ .32 were removed using the same iterative process (Osborne, 2008) that has resulted in robust and stable factor structures for several measures investigated in previous research (Asmundson, Bovell, Carleton, & McWilliams, 2008; Carleton, Norton, & Asmundson, 2007; Sexton & Dugas, 2009). At least half of the items in each final factor were required to have loadings ≥ .60 to support factor stability (Guadagnoli & Velicer, 1988). The resulting factor structure and item count—derived from the aforementioned EFA with the first sample—were then assessed using CFA with data from the second sample, allowing for an initial cross-validation of the Part B factor structure.

Finally, a series of hierarchical regression analyses was performed using data from the first sample, which included the PSWQ, WAQ, NPOQ, and BDI–II as dependent variables. In order to demonstrate the additional variance accounted for by the IUI Part B items beyond the IUI Part A items, the IUI Part A was entered into Block 1 of the independent variables, with the IUI Part B subscales (the original factors and the EFA-suggested factors) entered into Block 2 of the independent variables. Multicollinearity—although always critical for hierarchical regression (Tabachnick & Fidell, 2001)—was prioritized because of the demonstrated high Cronbach's alphas, high interfactor correlation range for the IUI factors (i.e., r = .38 to .87), and high average interitem correlation for the IUI items (i.e., r = .48 to .60).

Results

Descriptive Results

Descriptive statistics are presented in Tables 1, 2, and 4. There were no items, scales, or subscales with unacceptable skew or

Table 2
Part B Descriptive Statistics and Factor Loadings, Both Samples

Item	First sample (n = 437)						Second sample (n = 313)		
				Factor loading					
	M (SD)	S	K	1	2	3	M (SD)	S	K
1. I prefer to avoid uncertain situations	2.18 (0.97)	0.69	0.14	.74			2.70 (1.22)	0.35	−0.86
2. When I find myself in an uncertain situation, I tend to have doubts about what I am doing	2.20 (0.96)	0.73	0.31		.66		2.71 (1.24)	0.27	−0.97
3. I often exaggerate the odds that the worst will happen when something unexpected occurs	2.05 (1.07)	0.79	−0.23			.71	2.69 (1.32)	0.19	−1.16
4. I tend to want to boss others around so that nothing unexpected will happen to them	2.40 (1.17)	0.51	−0.64	.81			2.14 (1.23)	0.83	−0.38
5. I often rely on others to reassure me when I do not know what will happen	2.23 (1.03)	0.71	0.02	.58			2.51 (1.31)	0.40	−0.99
6. I worry a lot about life's uncertainties	1.95 (1.02)	1.02	0.50	.88			2.73 (1.40)	0.29	−1.21
7. I often have doubts about myself when a situation is uncertain	2.16 (1.06)	0.85	0.12				2.74 (1.30)	0.25	−1.06
8. The possibility that a negative event may occur leads me to avoid certain activities	1.81 (0.95)	1.16	0.80	.87			2.50 (1.32)	0.48	−0.96
9. When I am uncertain, I need to be reassured by others	2.33 (1.05)	0.68	−0.08			.81	2.59 (1.31)	0.42	−0.96
10. I must control everything in order to prevent negative consequences from happening	2.03 (1.05)	0.92	0.26	.65			2.34 (1.31)	0.62	−0.86
11. I tend to ask for the opinion of others when I am unsure about what will happen	2.54 (0.99)	0.51	−0.15				3.02 (1.24)	0.02	−0.97
12. I avoid situations that in which something unanticipated is likely to occur	1.87 (0.92)	1.07	1.01	.69			2.28 (1.25)	0.61	−0.79
13. When the outcome of an event is uncertain, I often doubt having done all that was necessary	2.11 (0.96)	0.84	0.59		.83		2.48 (1.31)	0.49	−0.90
14. When a negative event might happen, I often overestimate the likelihood that it will take place	1.96 (0.97)	0.98	0.63				2.54 (1.33)	0.40	−0.99
15. I tend to worry when I am uncertain about what will happen	2.23 (0.92)	0.70	0.22				2.76 (1.36)	0.29	−1.14
16. I often ask for the same information from several people to reassure myself about what will happen	1.86 (0.96)	1.01	0.36	.54			2.66 (1.46)	0.32	−1.31
17. Uncertain situations worry me	2.11 (0.90)	0.87	0.89			.84	2.60 (1.37)	0.42	−1.12
18. When I am uncertain about what will happen, I try to control everything	2.05 (1.05)	0.81	−0.07		.91		2.37 (1.31)	0.61	−0.81
19. I tend to overestimate the probability that something bad will occur when I do not know what will happen	1.80 (0.93)	1.10	0.75				2.50 (1.34)	0.42	−1.07
20. Thinking that something unexpected might happen worries me	1.76 (0.84)	1.21	1.74	.84			2.37 (1.34)	0.64	−0.85
21. When I am uncertain, I tend to doubt my capabilities	2.17 (1.01)	0.80	0.25				2.76 (1.36)	0.26	−1.16
22. I tend not to engage in activities involving some uncertainty	1.79 (0.91)	1.15	1.09		.90		2.22 (1.23)	0.67	−0.69
23. When I am uncertain, I tend to overestimate the odds that the events will turn out badly	1.83 (0.88)	1.01	0.76			.78	2.46 (1.33)	0.40	−1.13
24. I tend to want to control my loved one's activities in order to decrease the chances that something will happen to them	2.21 (1.07)	0.71	−0.10				2.28 (1.30)	0.73	−0.59
25. Even if it is unlikely that a negative event may occur, I need to be told repeatedly that everything will go well	1.61 (0.88)	1.52	1.94				2.12 (1.36)	0.89	−0.57
26. I prefer to drop a project rather than have to live with uncertainty	1.47 (0.74)	1.61	2.19			.88	1.92 (1.23)	1.16	0.16
27. I prefer to control everything in order to decrease uncertainties	1.93 (1.03)	1.17	1.00				2.17 (1.29)	0.84	−0.49
28. Not knowing what the future holds for me worries me	1.82 (0.95)	1.17	1.04		.87		2.56 (1.39)	0.43	−1.10
29. In an uncertain situation, I tend to exaggerate the chances that things may go badly	1.78 (0.91)	1.09	0.64	.67			2.43 (1.34)	0.46	−1.06
30. I often tend to question my choices when I am uncertain about what will happen	2.07 (0.97)	0.84	0.37	.74			2.77 (1.34)	0.21	−1.14

Note. IUI–B = Intolerance of Uncertainty Index—Part B; S = skew (SE = 0.12 in first sample, 0.14 in second sample); K = kurtosis (SE = 0.23 in first sample, 0.28 in second sample).

Table 3
Sample Descriptive Statistics and Sex-Based Comparisons

	First sample (n = 437)							Second sample (n = 313)							
	Men	Women	M–W	Both	F–G			Men	Women	M–W	Both	S–G			F–S
Scale	*M* (*SD*)	*M* (*SD*)	r^2	*M* (*SD*)	r^2	*S*	*K*	*M* (*SD*)	*M* (*SD*)	r^2	*M* (*SD*)	r^2	*S*	*K*	r^2
IUI–A total	28.39 (9.56)	31.06 (11.26)	.01	30.33 (10.87)	.01*	1.00	0.80								
IUI–B subscales															
Overestimation	9.15 (3.83)	9.53 (4.43)	<.01	9.42 (4.27)	.04*	1.02	0.61	12.08 (6.05)	12.84 (6.27)	<.01	11.62 (5.40)	<.01	0.65	−0.61	.11*
Avoidance	8.96 (3.07)	9.19 (3.83)	<.01	9.13 (3.63)	<.01	1.07	1.13	10.69 (5.35)	11.98 (5.39)	.01	13.46 (5.74)	.16*	0.34	−0.93	.09*
Doubt	9.88 (3.57)	11.03 (4.54)	.03	10.72 (4.32)	.02*	0.92	0.73	12.55 (5.63)	13.81 (5.76)	.01	12.63 (6.21)	<.01	0.38	−1.04	.09*
Control	10.22 (3.97)	10.77 (4.78)	<.01	10.62 (4.58)	<.01	0.93	0.55	10.46 (4.99)	11.62 (5.66)	.01	11.30 (5.50)	.01	0.73	−0.44	.01
Worry	8.87 (3.36)	10.21 (4.05)	.04*	9.85 (3.92)	.01*	0.94	0.57	11.78 (6.50)	13.50 (6.16)	.02	13.02 (6.29)	.04*	0.42	−1.05	.11*
Reassurance	9.50 (3.42)	10.98 (4.22)	.05*	10.57 (4.06)	.05*	0.84	0.24	11.79 (5.62)	13.34 (5.73)	.01	12.91 (5.73)	<.01	0.49	−0.81	.07*
IUI–B total	56.47 (16.70)	61.75 (21.47)	.02	60.30 (20.39)	.02*	0.83	0.36	69.36 (30.15)	77.10 (30.99)	.01	74.95 (30.91)	.03*	0.41	−0.90	.10*
PSWQ	37.09 (9.04)	40.37 (9.93)	.02	39.47 (9.79)		0.69	0.55								
WAQ total	28.08 (14.33)	32.72 (17.57)	.03*	31.45 (16.86)		0.32	−0.67								
NPOQ	19.14 (6.60)	20.53 (7.73)	.01	20.15 (7.46)		1.37	2.06								
BDI–II	24.18 (10.10)	25.36 (13.39)	<.01	25.04 (12.57)		−0.01	0.84								

Note. Degrees of freedom were corrected to correct for failing to meet homogeneity of variance as necessary. IUI–A = Intolerance of Uncertainty Index—Part A; IUI–B = Intolerance of Uncertainty Index—Part B; PSWQ = Penn State Worry Questionnaire; WAQ = Worry and Anxiety Questionnaire; NPOQ = Negative Problem Orientation Questionnaire; BDI–II = Beck Depression Inventory–II; *S* = skew (*SE* = 0.12 in first sample, 0.14 in second sample); *K* = kurtosis (*SE* = 0.23 in first sample, 0.28 in second sample); M–W = men compared to women; F–S = first sample compared to second sample; F–G = first sample compared to that from Gosselin et al. (2009); S–G = second sample compared to that from Gosselin et al.
* $p < .05$, after a Bonferroni correction to $p < .00122$.

kurtosis for the EFA (i.e., all had positive standardized skewness values that exceeded 2 or positive standardized kurtosis values that exceeded 7; see Curran, West, & Finch, 1996; Tabachnick & Fidell, 2001), and as a result, the use of maximum-likelihood estimation was supported (Flora & Curran, 2004). In the first sample, women reported statistically significantly higher scores ($p < .05$) on the IUI Part B Worry and Reassurance subscales, as well as the WAQ total score and a trend toward significance on the PSWQ total score (see Table 2); however, women and men were comparable on the IUI Part A total score and the other IUI Part B subscales. In the second sample, women and men reported statistically comparable scores on the IUI Part B total score and all of the subscale scores.

The original published descriptive statistics were used as bases for comparison (i.e., Part A total, $M = 32.85$, $SD = 10.88$; Part B total, $M = 66.06$, $SD = 21.56$; Overestimation, $M = 11.29$, $SD = 4.97$; Avoidance, $M = 9.32$, $SD = 3.69$; Doubt, $M = 12.02$, $SD = 4.44$; Control, $M = 10.19$, $SD = 4.75$; Worry, $M = 10.81$, $SD = 4.20$; Reassurance, $M = 12.48$, $SD = 4.59$; Gosselin et al., 2008). The first sample was comparable to the Gosselin et al. (2008) sample only on the IUI Part B Avoidance and Control subscales; for all other subscales the Gosselin et al. sample reported higher scores. In contrast, the second sample reported higher scores than the Gosselin et al. sample on the IUI Part B total score and the Avoidance and Worry subscale scores, with a trend toward significance on the IUI Part B Control subscale score. Post hoc correlation analyses revealed no statistically significant correlations with age ($p > .05$, $r^2 < .02$), suggesting the differences may be the result of more complex factors. Overall, the sample comparison results along with the reliability of the test scores within each sample suggest more variance between samples than within samples (see Table 3); therefore, although the samples may be different, the within-sample response patterns appear cohesive enough to proceed with comparative factor analyses.

Initial CFA Results

The fit indices from the first sample data (see Table 5) were not ideal for any of the original Part A factor structures (i.e., unitary, two-factor, three-factor). Based on the modification indices for the unitary model, removing Items 2, 9, and 13 statistically significantly improved the model fit ($\chi^2 = 270.19$; $\chi^2/df = 5.00$; $CFI = .93$; $SRMR = .04$; $RMSEA = .10$, 90% CI [.09, .11]; $ECVI = .73$, 90% CI [.62, .86]) because of overlapping response patterns as noted in the highly correlated error variances associated with those items; however, such atheoretical removals should also be evaluated by EFA and content analysis (Osborne, 2008; Tabachnick & Fidell, 2001; Urbina, 2004). The fit indices from the first sample data were also not ideal for the original Part B six-factor structure (see Table 5); however, the six-factor structure was statistically significantly superior to a unitary model. In this case a variety of modification indices suggested overlapping response patterns as noted in the highly correlated error variances associated with those items; however, unlike the Part A modification indices, those in Part B were relatively smaller and more diffuse across the items. Accordingly, any item removal would be better accomplished first through EFA and content analyses (Osborne, 2008; Tabachnick & Fidell, 2001; Urbina, 2004).

Table 4
Descriptive Statistics, First Sample (n = 437)

Scale	*M* (*SD*)	*S* (*SE*)	*K* (*SE*)	Min–Max
PSWQ total	39.47 (9.79)	0.69 (0.12)	0.55 (0.23)	16–77
WAQ GAD symptoms total	31.45 (16.86)	0.32 (0.12)	−0.67 (0.23)	0–78
NPOQ total	20.15 (7.46)	1.37 (0.12)	2.06 (0.23)	12–52
BDI–II total	25.04 (12.57)	−0.01 (0.17)	0.84 (0.34)	0–69

Note. PSWQ = Penn State Worry Questionnaire; WAQ = Worry and Anxiety Questionnaire; GAD = generalized anxiety disorder; NPOQ = Negative Problem Orientation Questionnaire; BDI–II = Beck Depression Inventory–II; *S* = skew; *K* = kurtosis.

EFA Results

Given some of the challenges with the past and current CFA results, part of our intent for the current article was to reassess the psychometrics with an EFA using Osborne's (2008) new recommendations. For Part A, the parallel analysis and the scree plot both supported a unitary factor structure; furthermore, eigenvalues > 1 and the scree plot tend to overestimate the number of appropriate factors (Tabachnick & Fidell, 2001; Zwick & Velicer, 1986), suggesting that even a two-factor alternative may not be robust. None of the items were removed due to insufficient communalities, and none of the items cross-loaded (EFA loadings; see Table 1). The analysis resulted in a readily interpretable unitary factor structure accounting for 53.5% of the variance. The factor could be conceptualized as Intolerance of Uncertainty. Results of the EFA performed with the IUI Part B items were more complex (see Table 2). The parallel analysis and the scree plot both supported a three-factor structure that accounted for 66.8% of the variance. The largest factor included 10 items, most of which were from the Doubt, Reassurance, and Worry subscales, and could be conceptualized as Manifestations of Anxious Thought (MAT). The other two factors were the Control and Overestimation factors as described in the original study (Gosselin et al., 2008).

Follow-Up CFA Results

On the basis of the results of the EFA, there appeared to be no statistical support to modify the items or factor structure of Part A of the IUI beyond the supported unitary model. Therefore, an additional CFA with the unitary Part A was deemed unnecessary. In contrast, the EFA-suggested three-factor solution for Part B warranted a CFA using data acquired from the second sample. The resulting fit indices supported the 20-item three-factor model as being statistically superior to the unitary and six-factor models. This suggests that the reduced items may produce a more robust factor structure; however, incremental validity remained to be assessed.

Regression Results

A series of regressions was run to evaluate the incremental validity of the original IUI Part B subscales beyond the IUI Part A total score for each of the additional dependent variables measured in the first sample (i.e., the PSWQ, WAQ, NPOQ, and BDI–II). The CFA results indicated a unitary model with the current items was not an ideal fit; however, the results of the EFA, the parallel analysis, and the scree plot all suggested that a unitary model was the best fit for the Part A items. As such, Part A was used as a unitary measure with simple summation within the regression analyses. These first regressions revealed potentially problematic levels of multicollinearity (Tabachnick & Fidell, 2001) for the original IUI Part B Worry subscale (*tolerance* = .186; *variance inflation factor* [*VIF*] = 5.38; *r*s $>$ .58). In this case the multicollinearity violation was considered potentially important but insufficient to warrant removing the subscale entirely; therefore, the Worry subscale was retained for the subsequent analyses. Each dependent variable was entered individually, with the Part A total score entered into Block 1 and all of the original IUI Part B subscales entered into Block 2 (to demonstrate amount of additional variance

Table 5
Confirmatory Factor Fit Indices

Scale and factor	χ^2	*df*	χ^2/df	*CFI*	*SRMR*	*RMSEA*	*RMSEA* 90% CI	*ECVI*	*ECVI* 90% CI
IUI–A									
1 (15 items)	621.84	90	6.91	.88	.06	.12	[.11, .13]	1.56	[1.39, 1.75]
2 (15 items)	594.64	89	6.68	.88	.06	.11	[.11, .12]	1.51	[1.34, 1.69]
3 (15 items)	555.46	87	6.39	.89	.06	.11	[.10, .12]	1.43	[1.26, 1.61]
IUI–B									
1 (30 items)	4,034.96	405	9.96	.67	.09	.14	[.14, .15]	9.53	[9.07, 10.01]
6 (30 items)	1,581.22	390	4.05	.89	.06	.08	[.08, .09]	3.97	[3.70, 4.26]
3 (20 items)	575.19	167	3.44	.94	.05	.09	[.08, .10]	2.12	[1.90, 2.37]

Note. IUI–A = Intolerance of Uncertainty Index—Part A; IUI–B = Intolerance of Uncertainty Index—Part B; CFI = confirmatory fit index; SRMR = standardized root-mean-square residual; RMSEA = root-mean-square error of approximation; CI = confidence interval; ECVI = expected cross-validation index.

accounted for by the IUI Part B subscales). The results suggested that in all cases the Part B subscales did account for an additional statistically significant amount of variance (see Table 6); however, the pattern of associations varied for each dependent variable. For the PSWQ, the Avoidance, Doubt, and Worry subscales were significant, whereas for the WAQ, only the Doubt and Worry subscales were significant. For the NPOQ, the Doubt, Overestimation, Control, and Reassurance subscales were all significant. In contrast to the other three dependent variables, although the combination of Part B subscales contributed an additional significant amount of variance to the BDI–II scores, no individual subscale was significant.

A subsequent series of regressions was then run to evaluate the incremental validity of the three EFA-suggested IUI Part B subscales beyond the IUI Part A total score for each of the additional dependent variables measured in the first sample (i.e., the PSWQ, WAQ, NPOQ, and BDI–II). In these analyses there were no apparent problems with multicollinearity for any of the subscales. Once again each dependent variable was entered individually, with the Part A total score entered into Block 1 and all of the three EFA-suggested IUI Part B subscales entered into Block 2 to demonstrate the amount of additional variance accounted for by the IUI Part B subscales. The results suggested that in all cases the three EFA-suggested IUI Part B subscales did account for an additional statistically significant amount of variance (see Table 6); however, the pattern of associations again varied across the dependent variables. For the PSWQ, the WAQ, and the BDI–II, only the MAT subscale was significant, whereas for the NPOQ all three were significant.

Discussion

The current study assessed the psychometric properties of the English version of the IUI. The assessment began with an evaluation of the descriptive statistics, comparative analyses across sexes and samples, and intercorrelations. Thereafter, a CFA and an EFA were performed, followed by a series of regression analyses. Based on the descriptive statistics, the individual IUI item re-

Table 6
Regression Results

		First series					Second series				
Block	Subscale	β	*t*	part *r*	ΔR^2	ΔF	β	*t*	part *r*	ΔR^2	ΔF
PSWQ (Constant)			18.96**					17.65**			
1	IUI–A total	.17	2.72**	.09	.38	270.92**	.27	4.80**	.17	.38	270.92**
2	Overestimation	−.01	−0.17	−.01			.04	0.71	.02		
	Avoidance	−.14	−2.86**	−.10							
	Doubt	.27	4.39**	.15							
	Control	.01	0.27	.01	.13	18.25**	.01	0.19	.01	.10	26.68**
	Worry	.40	5.05**	.17							
	Reassurance	.05	0.86	.03							
	MAT						.44	7.57**	.26		
WAQ (Constant)			2.59**					1.79**			
1	IUI–A total	.20	2.69*	.11	.26	149.05**	.25	3.87**	.16	.26	149.05**
2	Overestimation	−.03	−0.48	−.02			−.01	−0.20	−.01		
	Avoidance	−.12	−1.92	−.08							
	Doubt	.17	2.36*	.09							
	Control	<.01	0.11	.00	.06	6.48*	.01	0.18	.01	.05	11.22**
	Worry	.28	2.98	.12							
	Reassurance	.08	1.27	.05							
	MAT						.35	5.23**	.21		
NPOQ (Constant)			6.73**					6.65**			
1	IUI–A total	.13	2.28*	.07	.36	245.98**	.13	2.57*	.08	.36	245.98**
2	Overestimation	.21	4.60**	.14			.25	5.69**	.17		
	Avoidance	−.02	−0.46	−.01							
	Doubt	.45	8.22**	.25							
	Control	−.12	−3.01**	−.09	.25	47.04**	−.14	−3.84**	−.12	.24	85.94**
	Worry	.06	0.89	.03							
	Reassurance	.11	2.20*	.07							
	MAT						.54	10.70**	.33		
BDI–II (Constant)			12.93					13.30**			
1	IUI–A total	.03	0.37	.02	.07	31.24**	.03	0.38	.02	.07	31.24**
2	Overestimation	−.01	−0.15	−.01			.11	1.67	.08		
	Avoidance	.06	0.68	.03							
	Doubt	.10	1.46	.07							
	Control	.04	0.58	.03	.04	3.03**	.05	0.90	.04	.04	5.66**
	Worry	.03	0.30	.01							
	Reassurance	.13	1.76	.08							
	MAT						.18	2.36*	.11		

Note. IUI–A = Intolerance of Uncertainty Index—Part A; PSWQ = Penn State Worry Questionnaire; WAQ = Worry and Anxiety Questionnaire; NPOQ = Negative Problem Orientation Questionnaire; BDI–II = Beck Depression Inventory–II; MAT = Manifestations of Anxious Thought.
* $p < .05$. ** $p < .01$.

sponses were approximately normally distributed within the sample. As noted in previous studies on measures of IU (Carleton, Norton, & Asmundson, 2007; Norton, 2005; Tabachnick & Fidell, 2001), Cronbach's alpha, high interitem correlations, and intersubscale correlations (within the IUI Part B) suggested the possibility of item redundancy.

Women reported higher scores than men on the IUI Part B Worry and Reassurance subscales in the first, but not the second, sample. The significant differences may have been spurious or may have been the result of cultural differences between the first Quebec-specific sample and the second, more general, Canadian sample. Indeed, across both sexes participants in the more general Canadian sample reported higher levels of IU as measured by all but one subscale from the IUI Part B (i.e., Control). These results suggest a potentially important difference between the samples; however, whether the difference is the result of the translation or something else remains to be determined. There were also inconsistent differences between the current samples and the previous Gosselin et al. (2008) undergraduate sample, wherein the first community sample reported lower scores and the second community sample reported higher scores. There were no correlations with age, suggesting that the differences may be the result of broader unidentified differences among the samples.

There are several possible reasons for the differences between the three samples. The original Gosselin et al. (2008) sample consisted of adult undergraduate university students, whereas the two new samples consisted of adult community members. As such, the slightly higher endorsement of IU in the Gosselin et al. sample relative to the first sample from the current study (consisting of native English-speaking participants also from Quebec) suggests that community members may be more tolerant of uncertainty than undergraduates. Alternatively, the first sample from the current study recruited people interested in participating in an investigation about familial relationships. In contrast, the original Gosselin et al. study invited students to participate in a study to validate measures related to anxiety, which may have increased the probability that those with slightly higher levels of anxiety—and likely to be less tolerant of uncertainty—would be more inclined to participate. Similarly, the data from the second sample in the current study (consisting of native English speakers from across Canada) may have been slightly higher than that from the original Gosselin et al. sample because recruitment invited people to participate in a study exploring different kinds of fear. In any case, the differences were relatively minor when compared to differences observed in IU between participants with and without clinically significant symptoms of GAD, as demonstrated in the original Gosselin et al. study.

The unitary factor structure of the IUI Part A was supported relative to the precedent multifactorial solutions; however, the unitary solution was not ideal. An atheoretical removal of Items 2, 9, and 13 because of highly correlated error variances resulted in a statistically significantly better fit (almost ideal), but the impact of removing these items remains to be reassessed with a larger sample. Such atheoretical removals should first be evaluated by EFA and content analysis (Osborne, 2008; Tabachnick & Fidell, 2001). The fit indices from the first sample for the IUI Part B supported the six-factor solution relative to a unitary solution; however, once again the fit was not ideal. For the IUI Part B, there were no readily recognizable solutions within modification indices.

The subsequent EFA using Osborne's (2008) current recommendations continued to support a unitary solution for the IUI Part A. In contrast, the results indicated a robust 20-item three-factor solution for the IUI Part B. Items suggested for removal came primarily from the Avoidance, Worry, and Reassurance factors. The three factors (i.e., MAT, Overestimation, Control) were ratified when evaluated against the data from the second sample. The superior fit may have simply been the result of removing redundant items. Alternatively, it may be that the cognitive components of uncertainty (e.g., doubt) are more cohesively related to the core IU construct than behavioral components (e.g., avoidance). If this is the case, the cognitive components of IU may serve to drive behaviors indirectly (i.e., through doubt resulting in hesitancy to act, general inhibition) rather than directly (i.e., through intentional avoidance or active worry).

Incremental validity of the IUI Part B items relative to the IUI Part A items was assessed with regressions using the original six-factor solution and the EFA-recommended three-factor solution. Despite some indications of problems with multicollinearity and the Worry subscale for the six-factor solution, there were no such concerns for the three-factor solution. In all cases the Part B subscales did account for an additional statistically significant amount of variance. Surprisingly, although the IUI accounted for statistically significant variance in worry as measured by the WAQ and depression symptoms as measured by the BDI–II, the percentages were relatively small (i.e., 31% and 11%, respectively). Most of that variance was accounted for by the IUI Part A, with very little added by the IUI Part B subscales. For the WAQ, Doubt was the only significant Part B predictor, either as an independent subscale or as subsumed by the MAT subscale. For the BDI–II, although the MAT subscale was a statistically significant predictor, none of the original Part B subscales were significant. These results suggest that the IUI has relatively little to do with worry as measured by the WAQ and depression as measured by the BDI–II, with most of the relationship existing with Part A. Regarding the PSWQ and the six-factor solution, the Avoidance, Doubt, and Worry subscales were key predictors, as might be expected given the clear overlap; however, the three-factor solution (wherein most of the avoidance and worry items were removed) accounted for a comparable amount of variance. This suggests that worry as measured by the PSWQ may be primarily related to general IU and resultant doubt.

In contrast to the WAQ, BDI–II, and PSWQ, the IUI subscale interactions with the NPOQ were more pervasive and dynamic. Indeed, the IUI accounted for half of the variance in NPOQ scores. The IUI Part A accounted for substantial variance; however, the IUI Part B Overestimation, Doubt, Control, and Reassurance subscales contributed additional variance. Similarly, all three factors from the EFA-suggested three-factor IUI Part B were significant predictors. These results suggest a strong relationship between IU and negative problem orientation, which may support a causal interaction between the cognitive IU components and subsequent problem-solving behaviors.

The current investigation includes several limitations that warrant consideration in interpretation of findings. These limitations may also provide directions for future research. First, the factor structure for Part A of the IUI was not resolved in such a fashion as to also receive robust support for unitary, two-factor, or three-factor models. As such, additional investigation of the IUI Part A in clinical samples may be warranted to determine the individual item utility and thereafter reassess the factor structure. Second, the potentially robust nature of the three-factor solution for Part B of the IUI remains to be reassessed in another large, independent sample. Third, the current results, while extending previous research with undergraduates (Gosselin et al., 2008), were based on community responses. Future research should investigate the IUI in clinical samples as well. Fourth, there are several measures of either IU (Carleton, Norton, & Asmundson, 2007) or related constructs such as intolerance of ambiguity (Kirton, 1981). The relative contributions made by Part A and Part B of the IUI should be compared with such alternative measures to better determine the differential utility of these options. Fifth, a variety of associated measures (i.e., PSWQ, WAQ, NPOQ, BDI–II) were assessed; however, measures of other associated constructs such as anxiety sensitivity (Carleton, Sharpe, & Asmundson, 2007) were not included. Subsequent research might benefit from exploring the relationships between the IUI subscales and anxiety sensitivity. Sixth, the relationship between IU and several personality constructs, neuroticism in particular, remains to be comprehensively explored. Seventh, the significant differences noted between the current samples and the original sample suggest there may be important language or cultural differences that should be explored. This supposition is further supported by earlier research indicating such differences in earlier measures of IU (Norton, 2005). Finally, the growing association between IU and a variety of anxiety disorders suggests that a longitudinal assessment of IU as a treatment outcome measure might provide theoretical and clinical utility.

Despite the limitations, the current study supports the utility of the IUI as an alternative measure to the IUS and IUS–12 for assessing IU. The results revealed that the factor structure for Part A of the IUI may be best represented by a unitary structure, whereas initial support was found for a robust three-factor version of the IUI Part B that is a departure from the original six-factor solution. The IUI Part A and Part B subscales were each shown to provide incremental validity in measures of worry, GAD symptoms, negative problem orientation, and depression. In other words, it appears that general IU and manifestations of uncertainty approximating more common anxiety disorder symptoms both appear to be significant contributing factors for worry, GAD symptoms, negative problem orientation, and depression. The results also support the utility of the IUI as an alternative measure to the IUS and IUS–12 for assessing IU. The IUI also adds to evidence that the IU construct can be described from either a unitary or multidimensional perspective. As such, the IUI may serve as an important outcome measure for the treatment of several anxiety disorders (Carleton et al., 2010; Dugas, Gosselin, & Ladouceur, 2001; Dugas et al., 2005; Holaway et al., 2006; Simmons et al., 2008).

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Received September 10, 2009
Revision received January 7, 2010
Accepted January 28, 2010 ■