

Incurious Motives to Seek Information about Potential Threats

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Abstract

In Study 1, 20 incurious worry reduction motive (IWRM) items were administered to 280 participants along with curiosity and worry scales. With factor analysis, two six-item scales were developed: focus on distress (IWRM-FD) and focus on relief (IWRM-FR). IWRM-FD was associated with wanting positive news about threats, whereas IWRM-FR was related to wanting negative news to be free from further worry. Neither the curiosity nor worry scales predicted wanting information. In Study 2, the IWRM scales were administered to 170 participants along with a coping inventory. IWRM-FD correlated with avoidant-coping, whereas IWRM-FR was associated positively with active-coping and advice-seeking. The results suggest that IWRM-FD reflects a desire to minimize distress, whereas IWRM-FR motivates identifying and dealing directly with problems. Copyright © 2010 John Wiley & Sons, Ltd.

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INTRODUCTION

Conditions of uncertainty are characterized by situations where relevant information is recognized as missing or ambiguous. Seeking out new information capable of reducing uncertainty is typically attributed to curiosity (Berlyne, 1966; Loewenstein, 1994), a motive that orients individuals to obtain knowledge expected to increase situational interest or improve understanding of something puzzling or complex (Litman, 2008). However, at times, individuals may find themselves in situations where there is uncertainty regarding potential threats to their physical or psychological well-being. In such situations, individuals will generally realize that if they acquire the information needed to resolve their uncertainty, they may learn undesirable news about the potential threat. This

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realization may result in experiences of increased *worry* – unpleasant thoughts and feelings associated with distress – about the potential threat (Khawaja & Chapman, 2007).

According to the theory of motivated information management (TMIM; Afifi & Weiner, 2004, 2006), in situations where there are potential threats, information-seeking is *not* motivated by a desire to stimulate interest or improve understanding, as with curiosity, but rather *by a desire to reduce worry associated with the potential threat* (see also Feltwell & Rees, 2004; Miceli & Castelfranchi, 2005 for highly similar views). Thus, when individuals are uncertain about potential threats, motives to resolve their uncertainty may be conceptualized as *incurious*, rather than curious, in nature. Moreover, TMIM predicts that when individuals are presented with opportunities to act on their incurious motives to gather potentially threatening information, their expectations about how the information will affect them influences their likelihood of seeking it out.

If the information is expected to be positive (i.e. ‘good news’), TMIM predicts that individuals should be more likely to actively seek it. If the information is expected to be negative (i.e. ‘bad news’), individuals are expected to only want the information if they feel capable of successfully dealing with it, otherwise individuals may passively avoid the information. Active approach or passive avoidance responses to potentially threatening information may have important consequences for the general health and well-being of individuals, as failing to gather information about potential threats may interfere with their ability to cope successfully with those threats.

Besides situational factors such as expectancies, dispositional tendencies to actively seek out new information are also theorized to play an important role in determining whether or not individuals will approach potentially threatening information (Afifi, Dillow, & Morse, 2004; Afifi & Weiner, 2004). However, the dispositional factors that may increase the likelihood of engaging in information-seeking about potential threats are unclear, and studies of the conditions that motivate individuals to actively seek such information have generally neglected to examine the role of personality variables very deeply if at all (Afifi et al., 2004; Beckjord, Rutten, Arora, Moser, & Bradford, 2008; Conley, Taylor, Kemeny, Cole, & Visscher, 1999). Related areas of research on dispositional worry and other expressions of distress have generally emphasized motives to *avoid* rather than approach information (Dugas, Freeston, & Ladouceur, 1997; Dugas, Gagnon, Ladouceur, & Freeston, 1998; Ladouceur, Gosselin, & Dugas, 2000; Krohne, 1993; Robichaud & Dugas, 2005; Sexton & Dugas, 2008, 2009), or have focused on situations that specifically involve social interaction rather than opportunities to obtain knowledge directly relevant to one’s well-being (Kashdan, Elhai, & Breen, 2007; Kashdan & Roberts, 2006; Renner, 2006). Importantly, none of these personality-oriented studies have focused specifically on seeking information about potential threats to one’s physical or psychological well-being.

Studies of individual differences in motives to seek out new information in general have demonstrated that individual differences in trait-curiosity are associated with knowledge-seeking behaviour when the desired information and mitigating circumstances are *non-threatening* (Litman, Hutchins, & Russon, 2005; Peters, 1978; Spielberger & Starr, 1994). However, it is presently unknown whether trait-curiosity would also be associated with wanting knowledge about potential threats. According to the TMIM, trait-curiosity should not be involved in seeking information about potential threats, given that the primary reason for gathering the relevant information is hypothesized to be the *reduction of worry*, rather than the stimulation of interest or facilitation of intellectual enrichment. Of course, it is possible that even if neither interest-arousal nor intellectual stimulation are the *primary*

goals involved in seeking information about potential threats, either or both may be unintended consequences, and therefore, curiosity may still play a part. However, the nature and degree of the relationship between curiosity and seeking potentially threatening information has not been empirically investigated.

To the best of our knowledge, there are no measures that have been developed specifically to assess individual differences in tendencies to incuriously seek out new information for the primary purpose of reducing worry associated with potential threats. A failure to consider the role of personality variables involved in seeking potentially threatening information represents a serious gap in the literatures of both worry and curiosity that may have important consequences for understanding why individuals choose to pursue or eschew information that may directly impact their well-being. In keeping with these observations, two studies were conducted with the goals of developing and validating measures of incurious motives to reduce worry by obtaining information about potential threats.

STUDY 1

In Study 1, 28 face-valid items were constructed that expressed thoughts and feelings theorized to reflect incurious motives to acquire information to reduce worry about potential threats. The internal consistency of the 'incurious worry reduction motive' (IWRM) items was examined in order to identify the best items for developing valid and reliable measures of this construct. In keeping with this goal, the factor structure of responses to the IWRM items was also examined, given that the nature and dimensionality of IWRM has not been previously explored.

In order to evaluate the predictive validity of our newly developed IWRM scales, relationships between the IWRM measures and self-reported wanting to learn information about a potentially threatening event when either positive or negative news about the threat was expected were examined. It was hypothesized that self-reported wishes to obtain potentially threatening information would be more strongly related to scores on the IWRM scales than to measures of trait-curiosity. The relationship between wanting potentially threatening information and dispositional worry was also evaluated to draw comparisons between this construct and IWRM.

Method

Participants

The participants were 280 students (148 women, 132 men) who ranged in age from 18 to 51 ($M = 21.34$, $SD = 4.62$), recruited from undergraduate psychology courses at a large southeastern university. All participants received extra credit for taking part in this study.

Instruments

IWRM item pool. Twenty-eight face-valid items were constructed that specifically described unpleasant experiences of worry that were expected to be reduced once relevant information was obtained (e.g. 'I'll feel better once I know'; 'I will worry about it until I investigate'). Although IWRM is a relatively specific and therefore somewhat narrowly defined construct, the concept is also fairly new and largely unexamined. Thus, in order to account for the potential breadth of the construct (Clark & Watson, 1995) several items

were constructed that referred to being overly preoccupied with the potential threat ('e.g. I can't focus on anything else while worrying'; 'I will be lost in thought about what's bothering me'), which may be associated with a desire to eliminate worry about it.

Participants were instructed to respond to each IWRM item as the second half of the following statement: 'In general, when I am feeling stressed or worried over something that I don't know. . .' Participants rated each item on a four-point frequency scale ranging from 'Almost Never' to 'Almost Always'. These 28 items formed a preliminary measure for assessing IWRM. In evaluating the internal consistency of the preliminary IWRM measure, eight items from the pool had relatively low item-total correlations ($<.30$) and low mean inter-item correlations ($<.20$) and were found to negatively impact Cronbach's alpha (Clark & Watson, 1995). Thus, these eight items were dropped from further consideration, resulting in a more homogeneous set of 20 items ($\alpha = .88$) that would be further evaluated with factor analysis.

Trait Curiosity Scale of the State Trait Personality Inventory (T-Cur; Spielberger, 1979) is a 10-item scale that asks respondents to indicate how frequently they generally experience feelings of interest and inquisitiveness. Participants responded to the T-Cur items by rating themselves on the same scale used for the IWRM items. Spielberger (1979) reports alphas $\geq .80$ for the T-Cur scale.

Epistemic Curiosity scale (EC; Litman & Spielberger, 2003) is a 10-item instrument that assesses interest in learning new ideas and taking enjoyment in solving problems or figuring out how things work. The EC scale uses the same rating format as the IWRM item pool. Alphas between .79 and .86 are reported for the EC scale (Litman & Spielberger, 2003).

Curiosity as a feeling-of-deprivation scale (CFD; Litman & Jimerson, 2004) is a 15-item instrument that measures a need to improve understanding of complex or puzzling matters, as reflected in a desire to increase competence, a lack of tolerance for seemingly unsolvable problems, and persistence in solving intellectual problems. The CFD scale uses the same rating format as the IWRM item pool. Alphas between .84 and .88 have been found for the CFD scale (Litman & Jimerson, 2004).

Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990) is a 16-item measure that inquires about tendencies to experience worry across a range of situations. Each PSWQ item is scored on a five-point Likert-type scale anchored by 'not at all typical' to 'very typical'. Alphas of .88–.95 are reported for the PSWQ (Molina & Borkovec, 1994).

Scenarios about potential threats. Participants were given a brief scenario to read that described a potential threat to their well-being, for which the outcome was unknown. These threat-scenarios were specifically designed to address domains of experience judged to have a high degree of relevance to the participants, all of whom were adults attending college. The scenarios described waiting to find out (1) The results of a college exam, (2) whether a romantic partner was unfaithful, (3) The results of a medical test for meningitis after a recent outbreak and (4) whether or not a job interview was successful. For each scenario, participants were led to expect either a negative or positive outcome; thus, there were 8 different scenarios in all (2×4). All participants randomly received one of the 8 scenarios, and were instructed to imagine that the situation was real. After reading the scenario, participants were asked to indicate how much they wanted to find out information about the outcome on a six-point Likert-type scale ranging from 'not at all' to 'very much'.

Procedure

At the beginning of the testing session, the experimenter introduced himself, indicated that the goals of the study were to learn about the participants' feelings and attitudes, and that additional information would be provided after taking part. Administration of the questionnaire instruments and scenario was counterbalanced. Approximately 30 minutes were required for participation.

Results and Discussion

To evaluate the dimensionality of the thoughts and feelings associated with IWRM, responses to the 20 IWRM items selected from the initial item-pool were submitted to iterated principal-axis factor analysis using the squared multiple correlation as the communality estimate (Russell, 2002). An examination of the scree plot of the eigenvalues (5.69, 1.49, 0.57, 0.32, 0.22...) and the results of a parallel analysis with 95% quantile intervals (Hays, 1987) both suggested that two factors should be extracted. Moreover, the first two factors accounted for nearly 95% of the common variance. Emergent factors were expected to be correlated, given that they would reflect different aspects of a relatively homogenous IWRM construct; thus, oblique (promax) rotation was used to facilitate interpretation of the extracted factors (Rummel, 1970).

Means, standard deviations, communalities and oblique factor loadings for the items that loaded on each rotated factor are reported in Table 1. Factor I was defined by 12 items with dominant salient loadings $\geq .49$ and no salient dual loadings. The content of these IWRM items all emphasized feelings of *distress* associated with worry, which would persist until

Table 1. Means, standard deviations, communalities and rotated factor loadings of the 20 incurious worry reduction motive (IWRM) items ($N = 280$)

	M (SD)	h^2	Factor I	Factor II
The problem will always be on my mind	2.75 (0.91)	.50	.73	-.05
It will be all I think about until I know	2.59 (1.00)	.50	.72	-.03
I will go over and over it again in my head	2.87 (0.91)	.51	.70	.03
It will bother me until I find out	2.89 (0.91)	.59	.64	.23
I will be lost in thought about what's bothering me	2.43 (0.90)	.36	.64	-.11
I can't focus on anything else while worrying	2.33 (0.99)	.32	.63	-.21
I can't be happy until I know the truth	2.44 (0.94)	.30	.54	.02
I will worry about it until I investigate	2.52 (0.93)	.36	.53	.13
It will be on my mind until something is done	3.27 (0.79)	.40	.52	.19
I have to know so I don't worry	2.88 (0.96)	.37	.51	.17
I don't let it worry me for long (reverse scored)	3.03 (0.86)	.25	.51	-.02
I feel that waiting to find out will torment me	2.54 (0.94)	.28	.49	.08
I don't like being uncertain	3.13 (0.89)	.14	.23	.21
I'd feel much better if I just knew	3.48 (0.77)	.52	-.10	.76
I would rather know than be left wondering	3.49 (0.76)	.52	.05	.70
I'll feel better after I find out	3.26 (0.79)	.25	-.11	.54
I'll feel relieved once I know	3.20 (0.89)	.30	.02	.54
I would rather know than not know	3.25 (0.97)	.26	.13	.44
I don't like not knowing	2.96 (1.05)	.18	-.01	.43
I feel that not knowing is the worst part	2.93 (1.00)	.30	.25	.36

Items in bold were selected for the IWRM-FD (Factor I) and IWRM-FR (Factor II) scales.

Items are listed in the descending order of magnitude for their dominant loading.

Factor loadings in bold are salient ($\geq .30$).

relevant information was known (e.g. 'It will bother me until I find out; 'I will worry about it until I investigate'). Factor II was comprised of seven items with dominant salient loadings $\geq .36$ and no salient secondary loadings. The items that loaded on the second factor all referred to a desire to have *relief* from worry, which was expected to be achieved once the relevant information was obtained (e.g. 'I'd feel much better if I just knew'; 'I'll feel relieved once I know'). Thus, the items that loaded on the first factor appeared to *focus on distress* (FD), and expressed a desire to avoid experiencing more negative feelings, whereas the items comprising the second factor primarily involved a *focus on relief* (FR), and expressed a desire to achieve freedom from further worry. This finding suggested that concern about suffering increased distress associated with worrying about a potential threat is psychologically distinct from being oriented towards attaining relief from worry. The two factors were only moderately positively correlated ($r = .31$).

The next step was to select items for developing measures of each IWRM factor. From Factor II, seven items had loadings $\geq .36$. However, one of these items had a secondary, though non-salient, loading of nearly equal magnitude on the second factor. As this item also had the lowest loadings of all the items on Factor II, it was deleted. The remaining six items, all of which had loadings $\geq .43$ and very small cross loadings were selected to form an IWRM Focus on Relief (IWRM-FR) scale. Although two of the items selected for the IWRM-FR scale had wording that was somewhat redundant (i.e. 'feel better') the correlation between these two items ($r = .36$) indicated only modest overlap (John & Soto, 2007), suggesting that despite some similarity in content, these two items were interpreted differently by respondents.

As it was considered desirable to have an equal number of items for measuring each factor, and to select a homogeneous set of items that most clearly assessed each IWRM dimension, the items with the highest loadings on Factor I were carefully reviewed on the basis of quality of content. Of the first few items with the strongest loadings, one item was judged to have content that emphasized thought perseverance without referring clearly to either experiences of worry or a desire to acquire new information about the potential threat ('I will go over and over it again in my head'); this item was eliminated. With the exception of this item, the six items with the strongest loadings ($\geq .54$) on Factor I were selected to form a scale for assessing individual differences in IWRM Focus on Distress (IWRM-FD).

Psychometric properties of the IWRM scales

Means, standard deviations and alpha coefficients for the six-item IWRM-FD and IWRM-FR scales, the PSWQ and the three trait-curiosity scales are reported in Table 2. Alpha for the IWRM-FD scale was fairly high ($\alpha = .82$, 95% CI = 0.79–0.86), especially for a brief, six-item scale. Alpha was acceptable, although not excellent, for the IWRM-FR scale ($\alpha = .71$, 95% CI = 0.66–0.76). Standard errors for the alphas of the two newly developed IWRM scales were low ($< .05$), indicating that the items for each scale were relatively homogeneous, which was corroborated by strong mean item-total correlations ($> .50$) for each measure. Alphas for all of the other scales in Study 1 were also adequate ($\alpha \geq .83$).

Zero-order correlations between the IWRM scales and the other personality measures are also reported Table 2. Consistent with the results of the exploratory factor analysis, the two IWRM scales were moderately positively correlated with each other. Both IWRM scales were positively correlated with the PSWQ scale, providing evidence that these two scales assessed concerns with worry. The stronger relationship found between IWRM-FD and PSWQ may reflect that the IWRM-FD scale emphasizes thinking about experiences of

Table 2. Means, standard deviations, alphas and zero-order correlations between the IWRM-FD and IWRM-FR scales, the PSWQ and measures of curiosity ($N = 280$)

	<i>M (SD)</i>	IWRM-FD	IWRM-FR	PSWQ	T-Cur	EC	CFD
IWRM-FD	15.43 (4.03)	(.82)					
IWRM-FR	19.59 (3.36)	.31	(.71)				
PSWQ	50.80 (13.04)	.59	.23	(.91)			
T-Cur	27.85 (4.64)	.04	.13	.02	(.73)		
EC	26.66 (5.65)	.14	.04	.06	.61	(.83)	
CFD	39.18 (8.38)	.27	.04	.25	.48	.80	(.87)

Alphas are reported on the diagonals.

Significant r 's are in bold ($p < .05$).

IWRM, incurious worry reduction motive; FD, focus on distress; FR, focus on relief; PSWQ, Penn State Worry Questionnaire; T-Cur, Trait Curiosity scale; EC, Epistemic Curiosity scale; CFD, Curiosity as a Feeling-of-Deprivation scale.

distress associated with worry whereas the IWRM-FR scale emphasizes achieving relief from worry. Although the IWRM-FD scale was uncorrelated with T-Cur, it had small positive correlations with the EC and CFD scales. By contrast, the IWRM-FR scale had a small positive correlation with T-Cur, but was uncorrelated to the other curiosity scales. The PSWQ scale had a small positive correlation with CFD, suggesting there is at least some overlap between the experiences of distress associated with tendencies to worry and being motivated to improve ones understanding of new intellectual information. As would be expected, the three curiosity scales were more highly correlated with each other than with the PSWQ or with the IWRM scales which provided additional evidence that, as hypothesized, incurious motives for seeking information are distinct from curiosity.

Relationships between the IWRM measures and wanting to know potentially threatening information

To evaluate the relationships between IWRM, trait curiosity, dispositional worry and wanting to know information about potential threats, simultaneous multiple regression was conducted with expectation (positive or negative), scenario ('job', 'exam', 'health', 'romance') and scores for the IWRM-FD, IWRM-FR, PSWQ, T-Cur, EC and CFD scales included as predictors of the dependent variable 'wanting to know'. All participants were randomly assigned into one of the scenario/expectation conditions and equally distributed into each condition.

A significant main effect was found for the IWRM-FR scale, $\beta = .193$, $SE = 0.057$, $t = 3.39$, $p < .001$, *partial r* = .25, indicating that IWRM-FR scores predicted wanting to know outcomes regardless of expectations. A significant expectation \times scenario interaction effect was also found, $\beta = 1.516$, $SE = 0.444$, $t = 3.43$, $p < .01$, *partial r* = .21, indicating that some scenarios were more likely to involve stronger reports of wanting information depending on expectations. As may be noted in Figure 1, without taking individual differences into account, participants tended to want to know the outcomes more for the 'exam' and 'job' scenarios when the expected result was positive and reported more wanting to know for the 'romance' and 'health' scenarios when the expected outcome was negative. This curious finding may reflect the age-range of the participants; the average respondent was in his or her early twenties, a cohort that may tend to be relatively optimistic regarding finding love and avoiding illness. When individuals are forewarned of

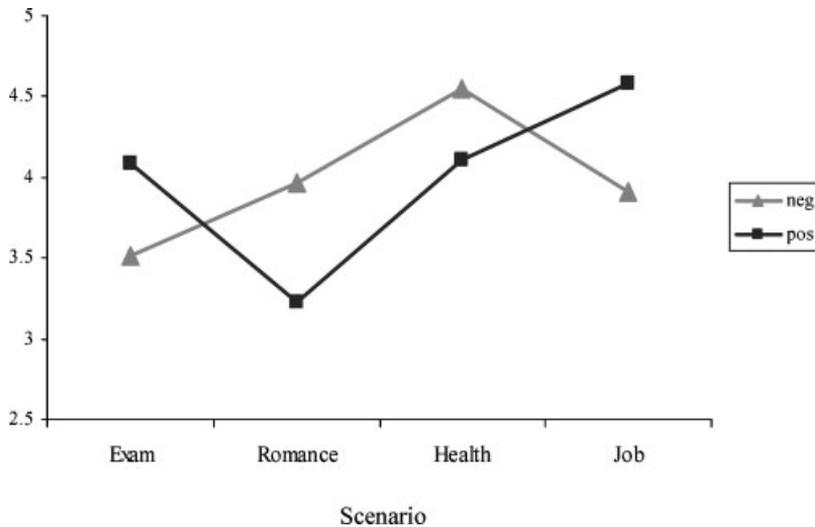


Figure 1. Mean self-reports of wanting to know positive or negative information for each scenario ($N = 280$).

events that violate their expectations, they may be more likely to attend to the relevant information (Seegerstrom, 2005). Thus, the negative outcome for these two particular scenarios may have been especially salient to this sample.

Consistent with our hypothesis, a statistically significant interaction effect was found for the expectation \times IWRM-FR effect, $\beta = -.247$ $SE = 0.050$, $t = 2.36$, $p < .01$, *partial r* = .18; a significant interaction effect was also found for the expectation \times IWRM-FD effect, $\beta = -.168$ $SE = 0.050$, $t = -3.34$, $p < .01$, *partial r* = .25. These two significant interactions indicated that the IWRM scales differentially predicted wanting to know outcomes depending on the expectation. Also as hypothesized, none of the curiosity scales nor the PSWQ interacted significantly with expectation. None of the other main or interaction effects were significant predictors of wanting to know.

To further evaluate the nature of the relationships between the IWRM measures, expectation and wanting to know information about potential threats, simultaneous multiple regression analyses were conducted separately for the positive outcome and for the negative outcome; all other predictors (i.e. scenario type, the PSWQ and the three curiosity measures) were included in each regression analysis to account for their effects. In the analysis of the positive outcome expectation, the IWRM-FD scale was significantly positively associated with wanting to know, $\beta = .111$, $SE = 0.032$, $t = 3.47$, $p < .001$, *partial r* = .34, whereas IWRM-FR scores were unrelated, $\beta = .020$, $SE = 0.032$ $t = .64$, *n.s.*, *partial r* = .07. When outcome-expectancies were negative, the IWRM-FR scale was significantly positively associated with wanting to know, $\beta = .127$, $SE = 0.035$, $t = 3.60$, $p < .001$, *partial r* = .35, whereas the IWRM-FD was negatively, though non-significantly, related to wanting to know, $\beta = -.07$, $SE = 0.037$, $t = -1.83$, *n.s.*, *partial r* = $-.18$. In both of these analyses, the other variables were not significant predictors of wanting to know.

These intriguing findings suggest that IWRM-FD scale scores were significantly and positively associated with wanting information that would minimize distress (i.e. 'good news'), but was somewhat negatively associated with desiring information that could increase it. This finding is consistent with the view that the IWRM-FD scale measures

concerns over experiencing increased distress, and suggests that IWRM-FD only motivates information-seeking behaviour when the information is *not* expected to generate further distress. By contrast, The IWRM-FR scale was significantly positively related to wanting information about negative outcomes (i.e. 'bad news'), but was unrelated to wanting good news regarding potential threats. One explanation for this relationship is that learning bad news about a potential threat enables one to identify problems that can be resolved through additional action. This interpretation is consistent with the idea that IWRM-FD motivates seeking information capable of bringing about relief from further worry, which may require taking measures to deal with the threat directly.

Taken together, these findings suggest that in dealing with potential threats, IWRM-FD motivates individuals to seek good news to buffer against their immediate distress, but may also motivate individuals to engage in avoidance when news is expected to be bad in order to prevent increases in distress. In contrast, the IWRM-FR scale appears to be associated with the pursuit of bad news in order to identify specific problems; presumably, once problems have been identified, they may be directly addressed and resolved, eliminating the need for further worry. Given that potential threats may become actual threats that will then need to be dealt with, the relationships found between the IWRM scales and wanting information in Study 1 have important implications for how individuals cope with stress, and suggest that IWRM-FD may be associated with avoidance-oriented forms of coping (e.g. Denial), whereas IWRM-FR may be related to active coping aimed at solving problems.

STUDY 2

In Study 2 there were two specific goals: The first was to evaluate the structural validity of the 2-factor, 12-item IWRM model identified by the exploratory factor analysis of Study 1 with a novel sample of respondents. The second goal was to gain a better understanding of whether the two IWRM traits were associated with the use of different kinds of strategies for coping with threats, as suggested by the regression analyses of Study 1. It was predicted that IWRM-FD would be associated with the use of avoidance-oriented coping strategies whereas IWRM-FR would be correlated with the use of active forms of coping.

Method

Participants

The participants were 170 (131 women, 39 men) students who ranged in age from 18 to 47 ($M = 20.73$, $SD = 4.28$), recruited from undergraduate psychology courses at a large southeastern university. All participants received extra credit for taking part in this study.

Instruments

IWRM-FD and IWRM-FR scales. These are the two six-item measures of IWRM developed in Study 1. Participants were instructed to respond to each IWRM item as the second half of: 'In general, when I am feeling stressed or worried over something that I don't know. . .'. Each item was rated on a four-point scale ranging from 'Almost Never' to 'Almost Always'.

The COPE inventory (Carver, Scheier, & Weintraub, 1989) is composed of fifteen four-item scales that assess a variety of coping strategies: *Planning* – creating a plan of action;

Active-coping – taking steps to eliminate the problem; *Suppression of Competing Activities* – focusing solely on the problem and ignoring distractions; *Restraint Coping* – waiting for right moment to act; *Instrumental Social Support* – seeking advice from others on how to deal with the problem; *Positive Reinterpretation* – reframing stressors in positive terms; *Acceptance* – accepting the problem for what it is; *Humour* – relying on your sense of humour to cope with the problem; *Religious Coping* – using faith for support; *Emotional Venting* – expressing negative feelings; *Emotional Social Support* – seeking sympathy from others; *Behavioural Disengagement* – giving up trying to deal with the problem; *Denial* – refusing to believe the problem is real; *Mental Disengagement* – mentally distracting oneself from thinking about problem; and *Substance Use* – using drugs or alcohol to distract oneself from the problem.

Factor analytic research on the COPE (see Litman, 2006 for a review) has shown that the scales define three dimensions of coping strategies: Self-Sufficient Approach-oriented Coping (Planning, Active Coping, Suppression of Competing Activities, Restraint Coping, Positive Reinterpretation, Acceptance, Humour and Religious Coping), Socially Supported Approach-oriented Coping (Instrumental Social Support, Emotional Social Support, Emotional Venting) and Avoidant-oriented Coping (Behavioural Disengagement, Denial, Substance Use, Mental Disengagement).

Using the dispositional response format, participants indicated how frequently they used each approach- or avoidance-oriented coping strategy on a four-point scale anchored by ‘usually don’t do this at all’ and ‘usually do this a lot’. Carver et al. (1989) reports adequate alpha coefficients ($Mdn = .75$) for the COPE scales.

Procedure

At the beginning of the testing session, the experimenter introduced himself, indicated that the goals of the study were to learn about the participants’ feelings and attitudes, and that additional information would be provided after taking part. Approximately 20 minutes were required for participation.

Results and Discussion

The fit of the 2-factor IWRM model identified in Study 1 was evaluated with confirmatory factor analysis using maximum likelihood estimation. Fit indices for the model were generally acceptable, CFI = 0.939, NNFI = 0.940, RMSEA = 0.080, RMSEA CI = 0.057–0.103, with the exception of chi-square, which was significant, $\chi^2 = 103.94$ (53), $p < .01$. However, Chi-square was less than twice the size of its degrees of freedom, which is indicative of an adequately fitting model (Hatcher, 1994). By allowing errors for the IWRM-FR items with slightly similar wording to correlate (e.g. the ‘feel better’ items), model fit was significantly improved, $\chi^2 = 86.73$ (49), $p < .001$, CFI = 0.955, NNFI = 0.956, RMSEA = 0.072, RMSEA CI = 0.046–0.096 (cf. Kubarych, Deary, & Austin, 2004; Reddy, 1992; Wolfe & Ethington, 1986). In both the standard and correlated error versions of the model, all of the loadings were strong and significant ($Mdn = 0.745$, $p < .001$). Thus, the model fit for the two factors (*inter-factor* $r = .57$) was deemed to be acceptable, especially for the early stages of research on these constructs.

Means, standard deviations and alpha coefficients between the 15 COPE scales are reported in Table 3; with the exception of three measures, which had alphas slightly below .70, alpha for all of the coping scales were generally adequate, especially considering all of

Table 3. Means, standard deviations, alphas and zero-order correlations between the 15 COPE scales ($N = 170$)

	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Planning	13.78 (2.36)	.77														
2. Active Coping	13.40 (2.16)	.64	(.79)													
3. Suppress Competing	11.01 (2.57)	.32	.29	(.76)												
4. Restraint Coping	11.27 (2.75)	.13	.05	.18	(.72)											
5. Positive Reinterpretation	13.27 (2.48)	.43	.28	.14	.05	(.67)										
6. Acceptance	13.15 (2.22)	.20	.12	.15	.11	.30	(.68)									
7. Humour	9.14 (3.91)	-.07	-.04	.11	.32	.15	.15	(.89)								
8. Religion	12.36 (4.40)	.20	.13	.09	.07	.24	-.01	-.20	(.95)							
9. Emotional venting	11.54 (3.35)	.02	.13	.26	.00	-.08	.04	-.11	.16	(.80)						
10. Instrumental Social Support	13.51 (2.49)	.34	.40	.25	-.04	.17	.12	-.11	.18	.35	(.70)					
11. Emotional Social Support	12.94 (3.26)	.06	.14	.15	.01	.07	.09	-.07	.23	.62	.52	(.82)				
12. Behavioural Disengagement	7.53 (2.67)	-.34	-.24	.17	.13	-.22	.12	.12	.00	.18	-.06	.13	(.74)			
13. Denial	6.77 (2.91)	-.11	-.06	.23	.17	-.10	-.22	.05	.07	.18	.03	.00	.44	(.75)		
14. Substance Use	6.95 (4.12)	-.19	-.30	-.01	.00	-.20	-.04	.21	-.23	.06	-.10	.06	.27	.22	(.94)	
15. Mental Disengagement	11.78 (2.63)	.01	.01	.32	.23	.03	.19	.18	.14	.37	.27	.39	.33	.26	.25	(.69)

Alphas are reported on the diagonals. Significant r 's are in bold ($p < .05$).

these measures consisted of only four items. In order to clarify the nature of and magnitude of the unique relationships between each IWRM scale and the various coping methods, partial correlations between the IWRM-FD ($M = 16.95, SD = 4.85, \alpha = .88$) and IWRM-FR ($M = 20.83, SD = 3.61, \alpha = .81$) scales and scores on the 15 coping strategies assessed by the COPE were examined. While these correlations were found to be essentially identical for both women and men, given the very small number of men in this sample, only data for the combined sample is reported, and it is important to note that at least some caution is warranted in generalizing these conclusions to both men and women; these data are reported in Table 4.

Consistent with expectations, The IWRM-FD scale was significantly positively correlated with Behavioural Disengagement, Denial, Substance Use and Mental Disengagement; all four of these strategies involve avoidance-oriented coping, and are characterized by distancing oneself from a problem and from the associated feelings of distress (Carver et al., 1989; Litman, 2006). The IWRM-FD scale was also significantly positively correlated with the use of Emotional Venting, a negative coping method that involves focusing on and expressing strong feelings of distress (Carver et al., 1989; Litman, 2006).

Also as expected, the IWRM-FR scale was significantly positively correlated with the frequency of using Active Coping, which involves taking steps towards dealing with a problem directly, and seeking Instrumental Social Support, which reflects seeking advice from others about how to resolve a problem (Carver et al., 1989). Interestingly, the IWRM-FR scale was also found significantly negatively correlated with the frequency of using Denial and Substance Use to deal with problems, suggesting that higher levels of IWRM-FR are associated with a lower likelihood of using these avoidance-oriented strategies. These results were consistent with the view that the IWRM-FD scale assesses a motive to acquire information only if it is not expected to increase distress. If further distress is anticipated, IWRM-FD may motivate individuals to engage in avoidance coping. These results were also supportive of the view that IWRM-FR motivates seeking information

Table 4. Partial correlations of the IWRM-FD and IWRM-FR scales with the COPE scales ($N = 170$)

	IWRM-FD	IWRM-FR
Planning	-.02	.09
Active Coping	-.13	.21
Suppress Competing	.11	-.03
Restraint Coping	.08	.08
Positive Reinterpretation	-.11	.14
Acceptance	.00	.11
Humour	.02	-.04
Religion	.15	.10
Emotional Venting	.40	.05
Instrumental Social Support	.07	.22
Emotional Social Support	.15	.15
Behavioural Disengagement	.24	-.15
Denial	.19	-.23
Substance Use	.26	-.39
Mental Disengagement	.20	-.11

Significant r 's are in bold ($p < .05$).

IWRM, incurious worry reduction motive; FD, focus on distress; FR, focus on relief.

likely to identify problems in order to engage in Active Coping aimed at the problem's resolution.

GENERAL DISCUSSION

The major goals of the present studies were to develop reliable and valid measures of dispositional tendencies to incuriously want information in order to reduce worry about potential threats to one's well-being. In Study 1, responses to a pool of 20 relatively homogeneous IWRM items were submitted to exploratory factor analysis, which identified two correlated factors. The first factor involved focusing on feelings of distress (IWRM-FD) associated with worry, and the second referred to focusing on achieving relief (IWRM-FR) from further worry. Six items were selected from each factor to form two internally consistent six-item scales. As expected, the two IWRM scales had only minimal relationships with measures of trait-curiosity, providing evidence that the IWRM measures assessed information-seeking motives that differed from curiosity. Both IWRM measures were positively related to the PSWQ, particularly the IWRM-FD, which was also as expected.

In predicting reports of wanting to know potentially threatening information, as hypothesized, neither the curiosity scales nor the PSWQ were significantly associated. Also as hypothesized, both IWRM scales predicted wanting information about threats, but the nature of the relationship depended on expectations. The IWRM-FD scale was associated with wanting information expected to be positive, whereas the IWRM-FR scale was primarily associated with desiring information expected to be negative. These findings suggested that the IWRM-FD motivates information-seeking expected to buffer against distress, and also suggested that if bad news was expected, individuals high in IWRM-FD might passively avoid the information. By contrast, IWRM-FR appeared to be primarily associated with wanting information capable of identifying problems that would require additional coping. These findings identify some of the personality variables that are relevant to seeking information about potential threats under different expectancies, which will be important to take into account in future research on the TMIM (Afifi & Weiner, 2004).

Although the interaction between IWRM-FD and IWRM-FR and expectancies about new information is interesting and potentially important, the factors that underlie this relationship were not elucidated in the present study. One possibility is that the two IWRM traits overlap with pessimism and optimism (IWRM-FD and IWRM-FR, respectively). Individuals with a pessimistic outlook generally expect bad news whereas optimists tend to expect good news (Scheier & Carver, 1985); as previously noted, when individuals are led to believe that an outcome will violate their expectancies, they may be more likely to attend to that information (Seegerstrom, 2005). Accordingly, individuals with high levels of IWRM-FD, may take more note of unexpected good news because it violates their pessimistic fears, while those with higher levels of IWRM-FR, may wish to learn unexpected bad news because it contradicts their optimistic hopes. This intriguing possibility will be important to investigate in future research.

Consistent with our view that IWRM-FD involves seeking good news but eschewing bad news, the IWRM-FD scale was correlated significantly and positively with the use of avoidance-oriented coping strategies. Likewise, consistent with our view that IWRM-FR orients individuals towards learning about problems in order to deal with them directly, the

IWRM-FR scale was positively associated with the use of Active Coping and seeking Instrumental Social Support, and negatively correlated to the use of avoidant-coping strategies. These findings also provided additional evidence that focusing of experiences of distress are meaningfully distinct from focusing on achieving relief, and involve psychologically different methods of responding to potentially threatening information. Accordingly, it will also be important in future research to explore potential relationships between the IWRM measures and other measures of constructs that reflect generalized tendencies to avoid new information, such as *intolerance of uncertainty* (Dugas, Gagnon, et al., 1998) and *anxiety sensitivity* (Moore, Chung, Peterson, Katzman, & Vermani, 2009), or to seek out new information, such as *need for cognition* (Cacioppo & Petty, 1982) or the Big Five concept of *openness* (McCrae & Costa, 1999) in order to determine how these variables interact with IWRM tendencies.

Limitations of the present study

While the findings of the present studies elucidate some of the personality variables that may motivate seeking potentially threatening information, as well as clarify those that do not, these studies are not without their limitations. First, all of the findings reported in this paper are based on the responses of student samples, and in Study 2 a predominance of the respondents were female. Therefore, an important goal for future research will be to further evaluate the factor structure, reliability and validity of these measures with a sample that is demographically more diverse (e.g. working adults, a wider range of age cohorts) as well more balanced in terms of gender.

Besides evaluating IWRM in a broader sample of respondents, it will also be important to examine a broader range of potential threats to one's well-being; the sorts of threats that are most salient will vary depending on the particular sample. In keeping with this goal, one potentially valuable direction for future research would be to examine the role of IWRM in settings where individuals are receiving consultation from health care practitioners regarding specific threats to their health. Practitioners who are more aware of the particular information needs of their patients may be better informed on how to successfully broach matters concerning their patients' health (Fröjd & Von Essen, 2006), which may help ensure that their patients engage in regular follow-up. It will also be worthwhile to investigate the stability of the IWRM scores during initial visits and after follow-up, which will provide information about the stability of these motives.

A second limitation is that although the present studies provided data on tendencies to *want* information they did not include any measures of *actual* information-seeking (or avoiding) behaviour. Thus, it will be important in subsequent research to examine the role of IWRM in situations where participants have opportunities to behaviourally approach or passively avoid potentially threatening information. On a related note, it may be informative to also examine possible relationships between IWRM and people's beliefs about their ability to regulate their negative mood states (Catanzaro, & Mearns, 1990), which may be critical in determining whether or not individuals act on their incurious desires to learn about potential threats. Likewise, the possible overlap between IWRM and constructs such as *distress tolerance* (Simons & Gaher, 2005), which involves focusing on and endeavouring to eliminate distress, and *experiential avoidance* (Hayes, Luoma, Bond, Masuda, & Lillis, 2006), which also motivates efforts to alleviate negative mood states, are potentially fruitful areas of exploration.

Importantly, acquiring (or failing to acquire) information relevant to one's physical or psychological well-being may predict whether individuals engage in self-regulatory, health protective behaviours (Cameron & Reeve, 2006; Uskul, Keller, & Oyserman, 2008), which will also be important to examine in future research. It will also be worthwhile in future research to consider the role these IWRM traits may play in individuals' approaching or avoiding information that concerns their well-being when it is framed in terms of either potential gains or losses (Mann, Sherman, & Updegraff, 2004).

Finally, besides the *valence* of the information (i.e. positive or negative), it may also be important to consider the *degree* of information seeking associated with IWRM, which was not investigated in the present studies, and may require a consideration of the concepts of *monitoring* and *blunting*. Although these two constructs do not appear to be related to experiences of worry, (Muris, Van Zuuren, De Jong, De Beurs, & Hanewald, 1994), 'monitors' tend to prefer a higher level of information as compared to 'blunters' (Miller & Mangan, 1983). Thus, IWRM has the potential to offer fertile ground for new research on seeking information about and coping with threats, by building bridges between existing areas that are relevant to dealing with distress, and individuals' efforts to protect their physical and psychological well-being.

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