

Validation of a French Adaptation of the Thought Control Ability Questionnaire

Philippe Gay^{1,2}, Mathieu d'Acremont¹, Ralph E. Schmidt^{1,2}, Martial Van der Linden^{1,2}

¹Swiss Centre for Affective Sciences, University of Geneva, Switzerland,

²Cognitive Psychopathology and Neuropsychology Unit, Department of Psychology, University of Geneva, Switzerland

KEYWORDS: thought control ability, intrusive thoughts, questionnaire validation, construct validity, convergent validity

ABSTRACT

Difficulties controlling one's thoughts have been related to several psychopathological states and are core issues in clinical evaluation and treatment. For this reason, Luciano, Algarabel, Tomás, and Martínez (2005) developed the Thought Control Ability Questionnaire (TCAQ). The aim of this study was to propose a reliable, valid French version of this questionnaire. To do so, a two-step methodology was followed. In a first study, the 25 items of the TCAQ were translated into French, and data were collected from a sample of undergraduates. The results revealed that two items were problematic in terms of the questionnaire's face validity and internal consistency. In a second study, data were collected using the remaining 23 items with a new sample of undergraduates. This time, the results revealed that the 23-item French TCAQ possesses good internal consistency and very high reliability, and fits with a unidimensional model of thought control ability. Convergent validity was found with measures of worry and obsessive symptoms. The usefulness of the TCAQ as a tool for clinicians and researchers in the field of self-regulation is discussed.

Introduction

Everybody experiences unwanted intrusive thoughts once in a while; in that sense, they may be considered as an inevitable by-product of the cognitive architecture of human beings (Clark & Rhyno, 2005; Klinger, 1999). However, unwanted intrusions may also reach a pathological level and contribute to the development or maintenance of mental disorders such as obsessive-compulsive disorder (OCD), generalized anxiety disorder (GAD), posttraumatic stress disorder (PTSD), mood disorders, and psychotic disorders (Clark & Rhyno, 2005; Rassin, 2005). Following Clark and Rhyno (2005), clinically relevant intrusive thoughts are unintended, recurrent, difficult to control, and they interfere with task performance and are associated with negative affect. Several studies suggest that parallels in terms of form and content can be drawn between clinically relevant and clinically nonrelevant everyday intrusions, both types of intrusion entailing most notably a decrease of attentional resources. The frequency or recurrence of intrusions may be the key feature that leads to subjectively perceived mental difficulties and, thus, to psychopathology. With the

advent of cognitive behaviour therapy, considerable efforts have been undertaken to devise specific therapeutic techniques to modify dysfunctional ways of thinking (Brewin, 2006). In this context, reliable measures of thought control ability are urgently needed for the evaluation of vulnerability factors and treatment outcomes.

Recently, Luciano, Algarabel, Tomás, and Martínez (2005) developed the Thought Control Ability Questionnaire (TCAQ; in Spanish), “a self-report measure of individual differences in the perceived ability to control unwanted, intrusive thoughts” (p. 997). To begin with, Luciano et al. (2005) generated a pool of 42 items that assessed the perceived ability to control unwanted thoughts, images, impulses, and emotions. Computerized versions of this 42-item questionnaire and of other questionnaires were then administered to 211 Spanish students by means of E-Prime. Only items with a high corrected item-total correlation ($>.40$) were retained for further analysis. The resulting 25-item scale, called the TCAQ, showed high internal consistency ($\alpha = .92$) and test-retest reliability after 8 weeks ($r = .88, p < .01$). TCAQ scores were negatively correlated with measures of depression, anxiety, pathological worry, guilt feelings, and obsessive-compulsive complaints. Moreover, TCAQ scores predicted depression, pathological worry, guilt feelings, and obsessive-compulsive complaints even after partialling out (in hierarchical regressions) other measures of thought control (White Bear Suppression Inventory, WBSI; Wegner & Zanakos, 1994; Thought Control Questionnaire, TCQ; Wells & Davies, 1994). These findings led Luciano et al. (2005) to conclude that the TCAQ has an incremental value that captures specific relationships between perceived thought control ability and a series of psychopathological states that have not been tapped by traditional measures of mental control.

The goal of the present study was to provide French-speaking researchers and clinicians with a reliable instrument for assessing perceived thought control ability. To do so, a two-step strategy was followed. In the first study, we translated the 25 items of the TCAQ in French and tested its construct validity by an exploratory factor analysis and other exploratory analyses. Because some problematic items were highlighted in the first study, a second study was conducted on a new sample. The problematic items were removed and the construct validity of the modified scale was tested with a confirmatory factor analysis. In the second study, in order to assess convergent validity, we examined the relationships between the TCAQ and other validated questionnaires assessing psychological problems such as worries or obsessions in which intrusive thoughts are considered to play a central role.

Study 1: Exploratory Factor Analysis

It should be noted that Luciano et al. (2005) did not evaluate the construct and convergent validity of the 25 selected items of the TCAQ on a new sample of participants. In addition, the items were presented on a computer in their study. Because the original Spanish TCAQ was neither tested in its final version (25 items) nor in paper-and-pencil conditions, we decided to limit this study to an exploratory factor analysis and related statistical analyses.

METHOD

Participants and Procedure

A total of 263 undergraduate students from the Faculty of Psychology and Educational Sciences and the Faculty of Economics and Social Sciences of the University of Geneva completed the French TCAQ; only native French speakers were retained for analyses. The final sample consisted of 207 participants (148 females and 59 males). Their ages ranged from 16 to 44 years, with a mean of 23.21 ($SD = 5.31$).

Instrument

The Thought Control Ability Questionnaire (TCAQ; Luciano et al., 2005) is composed of 25 items (e.g., “It is very easy for me to stop having certain thoughts”; “I manage to have control over my thoughts even when under stress”). They are answered on a 5-point Likert scale ranging from A (*strongly disagree* = 1) to E (*strongly agree* = 5). Higher scores reflect better perceived control over thoughts. The French TCAQ was developed as follows: (a) The first author of this study, with the help of two French-Spanish bilinguals, translated the 25 items of the original TCAQ into French; (b) two other French-Spanish bilinguals translated the French version back into Spanish, and (c) discrepancies between the original TCAQ and the two back-translations were discussed between the authors and the two back-translators until a satisfactory solution was found.

Results

Responses for several items were reversed so that higher scores always corresponded to better perceived thought control ability. Out of the 207 participants retained for the analysis, 11 had one missing value and 1 had two missing values on the TCAQ. Missing values were imputed by fully conditional specification (Van Buuren, 2007), a method available in the MICE package of R (R Development Core Team, 2006). The mean TCAQ total score was 76.98 ($SD = 14.97$). Univariate normality was explored by calculating the skewness and kurtosis of each item. Under normality, data should have a skewness of 0 and a kurtosis of 3. Absolute values for skewness and kurtosis greater than 3 and 20, respectively, are considered to be extreme (Weston & Gore, 2006). The results showed that skewness ranged from -0.81 to 0.63 and kurtosis from 1.91 to 3.07 . Thus, there was no indication of a strong deviation from normality and the computation of a factor analysis using the maximum likelihood method could be considered appropriate.

The internal consistency of the questionnaire was assessed by means of interitem and intraclass correlations. For intraclass correlations, the second author implemented in R the ICC(C,1) formula given by McGraw and Wong (1996). The recommended values for internal consistency range from .15 to .50 (Briggs & Cheek, 1986). Interitem correlations revealed that Item 8 was negatively correlated to several other items, suggesting problematic internal consistency. The intraclass correlation was .28, 95% confidence interval (CI) = (.24, .32); this value is situated in the lower part of the recommended range.

To test the unidimensionality of the questionnaire, we computed a principal component analysis and an exploratory factor analysis with one factor. The first five Eigenvalues of the principal component analysis were 8.05, 1.68, 1.38, 1.24, and 1.13. A scree-plot (Cattell, 1966) with a parallel

analysis (Horn, 1965) clearly suggested that the questionnaire was unidimensional. Indeed, only the first Eigenvalue was situated above the Eigenvalues extracted from random samples. Consequently, the covariance matrix was analyzed with an exploratory factor analysis computed with one factor. The total percentage of explained variance was rather modest (29.6%). To compare the factor solution found in the Spanish study with the present one, Tucker's congruence coefficient was calculated (Tucker, 1951). This measure represents an index of similarity between two factors based on their loadings and ranges from -1 (perfect inverse similarity) to 1 (perfect similarity). A value of 0 indicates no similarity. A value of .98 was found, suggesting an excellent similarity. Despite this high similarity, it should be noted that Items 5 and 8 had relatively small loadings (< .30) in French (.27 and .15, respectively). The English version of Item 5 is "I constantly censor my thoughts and actions"; the wording of Item 8 is "I constantly evaluate whether my thoughts and actions are appropriate." In Spanish and French, both items contain the word "actions" and might therefore capture behaviour control as well as thought control. In view of this semantic peculiarity, the negative correlations of Item 8 with several items, and the relatively low loadings of both items, we decided to remove them in the follow-up study. We assumed that this modification would yield a scale with better face validity and internal consistency.

Study 2: Confirmatory Factor Analysis and Convergent Validity

The purpose of the second study was to evaluate the construct validity of the 23-item French TCAQ and to examine its convergent validity with a new sample of undergraduates. More specifically, we wanted to see whether (a) the deletion of two items would increase the internal consistency of the scale, and (b) convergent validity would be observed with worries and obsessing. A unidimensional model of thought control ability was tested by means of a confirmatory factor analysis.

METHOD

Participants and Procedure

A total of 309 undergraduate students from the Faculty of Psychology and Educational Sciences of the University of Geneva completed the 23-item French TCAQ in the same way as in the first study; 139 members of this sample also completed questionnaires assessing pathological worry (Penn State Worry Questionnaire, PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990; French version: Gosselin, Dugas, Ladouceur, & Freeston, 2001) and severity of obsessive-compulsive symptoms (Obsessive-Compulsive Inventory – Revised, OCI-R; Foa et al., 2002; French version: Zermatten, Van der Linden, Jermann, & Ceschi, 2006). Only native French speakers were retained for analyses. The final sample was made up of 254 participants (188 females, 66 males) for the analysis of the TCAQ (age range: 17–49; $M = 22.70$; $SD = 5.38$), including 115 participants (99 females, 16 males) for the analysis of the relations between the TCAQ, the PSWQ and the OCI-R (age range: 17–49; $M = 22.26$; $SD = 6.10$).

Instruments

The TCAQ (Luciano et al., 2005) was described in the first study. A 23-item version of the French

TCAQ, without Items 5 and 8, was used. The PSWQ (Meyer et al., 1990; French version: Gosselin et al., 2001) is a 16-item self-report questionnaire assessing proneness to (pathological) worry. This questionnaire is widely used in research and has been shown to possess good psychometric properties in clinical and nonclinical samples. Answers are given on a 5-point Likert scale ranging from 1 (*not at all typical of me*) to 5 (*very typical of me*). The scale is thought to capture a unidimensional construct, with higher scores indicating higher trait worry. The OCI-R (Foa et al., 2002; French version: Zermatten et al., 2006) is a 18-item self-report questionnaire for the evaluation of obsessive-compulsive disorder (OCD) symptoms. It has been shown to possess good psychometric properties in clinical and nonclinical samples. Participants are asked to indicate on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*) to what extent the experience described in each statement has bothered or distressed them during the past month. The OCI-R is composed of six subscales, each containing three items: Washing, Obsessing, Hoarding, Ordering, Checking, and Neutralizing. Higher scores reflect more pronounced OCD symptoms

Results

The numbering of TCAQ items discussed in this section corresponds to their position in the modified version (see Table 1). Out of the 254 participants retained for analysis of the TCAQ, 6 had one missing value and 2 had two missing values. Out of the 115 participants retained for analysis of the OCI-R, 3 had one missing value and 1 had three missing values. There were no missing values for the PSWQ. Missing values were imputed by fully conditional specification (Van Buuren, 2007). The mean total score for the TCAQ was 68.31 ($SD = 16.27$). Skewness ranged from -0.73 to 0.59 and kurtosis from 1.85 to 2.64 . Thus, there was no indication of a strong deviation from normality.

Correlations between all items were positive, suggesting that the internal consistency problem affecting the 25-item French version was solved. The intraclass correlation was $.38$, $95\% CI = (.34, .43)$; the internal consistency is situated in the upper part of the recommended range of $.15$ to $.50$. The CI of the intraclass correlation in the first and second studies did not overlap, indicating that the 23-item version has higher consistency than the 25-item version.

The first five Eigenvalues of the principal component analysis were 9.64 , 1.52 , 1.21 , 1.05 , and 0.88 . A scree plot with a parallel analysis clearly suggested that the questionnaire was unidimensional. A factor analysis with one factor explained 39.4% of the variance, and all loadings were close to or greater than $.40$. Thus, the proportion of explained variance and the loadings were higher with the 23-item version than with the 25-item version. For the reliability of the scale, the ICC(C,K) formula given by McGraw and Wong (1996) was implemented in R (R Development Core Team, 2006). The ICC(C,K) is equal to the α coefficient (Cronbach, 1951), but offers the advantage of having a CI. The reliability was $.93$, $95\% CI = (.92, .95)$. This corresponds to very good reliability.

Sufficient knowledge has accumulated to formulate a unidimensional model of the TCAQ. We tested this model with a confirmatory factor analysis using the *SEM* package of R (R Development Core Team, 2006). Model fit was evaluated with the mean square error of approximation (RMSEA; Steiger, 1990) and the standardized root mean square residual (SRMR; Bentler, 1995). These fit indices are recommended because they are less sensitive to small misspecifications of the factor structure,

which are very common in the domain of personality research (Beauducel & Wittmann, 2005). A RMSEA between 0 and 0.05 indicates a good fit, and values between 0.05 and 0.08 an acceptable fit. An SRMR of between 0 and 0.05 indicates a good fit, and values between 0.05 and 0.10 an acceptable fit (Schermelel-Engel, Moosbrugger, & Müller, 2003). A confirmatory factor analysis with one factor yielded a $\chi^2(230) = 654.10, p < .01$. The RMSEA amounted to 0.085, 90% CI = (0.078, 0.093), and the SRMR to 0.062. The RMSEA was above the 0.08 cut-off, indicating some misspecification of the model.

Inspection of modification indices suggested that we should let the residuals of Items 6 and 7 covary. In addition, an inspection of the correlation matrix revealed that the highest correlation was found between these two items (.66*)¹

Table 1. Items and confirmatory factor analysis of the French adaptation of the TCAQ (N = 254)

#	Item	Loading	SE	Residual	Std loading
1	It is often difficult for me to fall asleep because my mind keeps going over personal problems	0.78	0.073	0.98	0.62*
2	I often cannot avoid having upsetting thoughts	0.79	0.065	0.72	0.68*
3	Although some people criticize me unfairly, I can't help thinking they might be right	0.63	0.073	1.09	0.51*
4	I manage to have control over my thoughts even when under stress	0.74	0.066	0.77	0.64*
5	Any setback overwhelms me, no matter how small	0.82	0.068	0.79	0.68*
6	I am usually successful when I decide not to think about something	0.66	0.060	0.64	0.63*
7	It is very easy for me to stop having certain thoughts	0.60	0.059	0.66	0.59*
8	I feel worried, frustrated or sad for a long time after having an embarrassing, troublesome or painful experience	0.64	0.064	0.77	0.59*
9	It is easy for me to free myself of troublesome thoughts	0.72	0.054	0.44	0.74*
10	Frequently, some thoughts or images take over my mind	0.59	0.063	0.79	0.55*
11	There are negative things in my past that I cannot help remembering	0.61	0.069	0.96	0.53*
12	There are few things in life that manage to trouble me	0.70	0.074	1.05	0.57*
13	I haven't been able to get the argument I had with (my partner, my parents, a friend . . .) out of my head for several days	0.68	0.066	0.80	0.61*
14	I consider myself a person who is good at controlling positive and negative emotions	0.75	0.056	0.49	0.73*
15	My thoughts control me more than I control them	0.86	0.060	0.51	0.77*
16	There are some thoughts that enter my head without me being able to avoid it	0.63	0.059	0.63	0.62*
17	My thoughts are uncontrollable	0.75	0.062	0.64	0.69*

¹ 0 not included in the 95% CI.

18	I am not usually overwhelmed by unpleasant thoughts	0.68	0.060	0.63	0.65*
19	I am unable to free myself from certain thoughts: e.g., "I am a failure," "I am useless," "I am no good at all," etc	0.64	0.068	0.92	0.55*
20	I think other people have more control over their thoughts than I do	0.64	0.065	0.82	0.58*
21	If I get angry or fight with someone, I can't stop thinking about it, and I can hardly work or concentrate	0.71	0.065	0.77	0.63*
22	I get rid of uncomfortable thoughts or images almost effortlessly	0.71	0.052	0.39	0.75*
23	I have much patience, and I do not lose my composure easily	0.41	0.066	0.95	0.39*

Note. Items were originally in Spanish (Luciano et al., 2005) and were translated into French for this study. *0 not included in the 95% CI.

Table 2. Observed (r_{obs}) and true score correlations (r_{true}) with the TCAQ total score ($n = 115$)

Scale/Subscale	r_{obs} (95% CI)	r_{true}
OCI-R		
Checking	-.22* (-.39 -.04)	-.27*
Ordering	-.21* (-.38 -.03)	-.24*
Obsessing	-.69* (-.77 -.58)	-.79*
Hoarding	-.34* (-.49 -.17)	-.43*
Washing	-.23* (-.40 -.05)	-.27*
Neutralizing	-.25* (-.41 -.07)	-.33*
PSWQ	-.75* (-.82 -.66)	-.82*

Note. * 0 not included in the 95% Confidence Interval. r_{true} is the correlation corrected for measurement error (Schmidt & Hunter, 1996).

Table 3. TCAQ total score regressed on the PSWQ and the six OCI-R subscales ($n = 115$)

Scale/Subscale	<i>B</i>	<i>SE</i>	<i>T</i> -value	β
Intercept	(115.05)	–	–	–
OCI-R				
Checking	0.031	0.48	0.06	.01
Ordering	-0.037	0.35	-0.10	-.01
Obsessing	-2.547	0.45	-5.65	-.44*
Hoarding	0.130	0.41	0.32	.02
Washing	-0.005	0.53	-0.01	.00
Neutralizing	1.120	0.66	1.69	.13
PSWQ	-0.806	0.10	-7.96	-.55*

Note: *0 not included in the 95% CI.

The English version of Item 6 is “I am usually successful when I decide not to think about something,” and the wording of Item 7 is “It is very easy for me to stop having certain thoughts” (see Table 1). These two items in French also have a very similar meaning, and they are adjacent in the 23-item version of the questionnaire. It is therefore likely that participants gave the same answer to both items. For these reasons, we let the residuals of Items 6 and 7 covary. The modified model yielded a $\chi^2(229) = 598.81, p < .01$. The RMSEA amounted to 0.080, 90% CI = (0.072, 0.088), and the SRMR was equal to 0.060. These results indicated that the 23-item French TCAQ had an acceptable fit. All standardized loadings were greater than .40 (Table 1). The reliability of a latent factor corresponds to the proportion of observed variance that is not due to measurement error (for a formula, see Raines-Eudy, 2000, p. 126). This proportion was equal to .93 and reflected a very good reliability. The effect of age and gender on the total score of the TCAQ was assessed by means of correlation analyses. Men had a higher score of thought control ability, $r_{\text{point-biserial}} = .29^*$, CI = (.17, .39), as did older participants, $r = .13^*$, CI = (.01, .25).

In order to evaluate the convergent validity of the adapted French TCAQ, correlations were computed between the total scores of the TCAQ, the PSWQ, and the subscale scores of the OCI-R. The coefficient α was .91 for the PSWQ. Concerning the OCI-R, the α was .75 for the Checking subscale, .81 for the Ordering subscale, .81 for the Obsessing subscale, .69 for the Hoarding subscale, .77 for the Washing subscale, and .59 for the Neutralizing subscale.

Measurement errors are known to reduce the observed correlation below the true score correlation (Schmidt & Hunter, 1996). We therefore computed the true score correlation by taking the reliability of the scales into account. Observed correlations (r_{obs}) and true score correlations (r_{true}) are presented in Table 2. As expected, the two strongest true score correlations were found between the total score for the TCAQ and the PSWQ ($r_{\text{true}} = -.82^*$), and between the total score for the TCAQ and the Obsessing subscale of the OCI-R ($r_{\text{true}} = -.79^*$). Regressions were then computed to see which aspect of obsession-compulsion best predicted thought control difficulty. Predictors were entered simultaneously because we were interested in assessing the relative importance of predictors rather than testing different models by selecting predictors (see Howell, 1998, pp. 601–613). When the six subscale scores of the OCI-R were introduced as predictors of the TCAQ total score in a regression analysis, only Obsessing was significant (multiple $R = 0.70$). The fact that the TCAQ was related to Obsessing but not to the other subscales shows that the TCAQ possesses discriminant validity. When the six subscale scores of the OCI-R and the PSWQ total score were introduced as predictors of the TCAQ total score, Obsessing and PSWQ were significant (multiple $R = 0.82$, Table 3). Thus, it appeared that the perceived ability to control thought was specifically related to obsessions and worries, and this result suggests that the TCAQ possesses convergent validity.

General Discussion

The aim of this study was to develop a French version of the Spanish TCAQ (Luciano et al., 2005), in order to provide French-speaking researchers and clinicians with a self-report measure of perceived thought-control ability. To this end, two complementary studies were conducted. In

Study 1, the 25 translated items of the TCAQ were analyzed based on the responses of 207 undergraduate students. In accordance with Luciano et al.'s (2005) results, the exploratory factor analysis suggested a unidimensional solution. However, the internal consistency and face validity of the scale were problematic. Content analysis revealed that two items included the word "actions." It is possible that the use of this term led respondents to self-evaluate their ability to control *actions* rather than *cognitions* (for this differentiation, see, for example, Baumeister & Vohs, 2004; Brewin, 2006). In Study 2, the two problematic items were removed and the resulting 23-item version of the French TCAQ was analyzed based on the responses of 254 participants. In parallel, measures of worry and of obsessive-compulsive symptoms were completed by a subsample of 115 participants in order to evaluate convergent validity. Exploratory and confirmatory analysis showed that the adapted French TCAQ was unidimensional and reliable, and that its internal consistency had increased compared to the first version. Interestingly, thought control ability increased with age, and men reported higher thought control ability than women. The effect of age suggests that perceived thought control ability increases with age – a result that opens interesting perspectives for future developmental studies. The effect of gender is in line with studies showing that women are at higher risk for anxiety and mood disorders (Nolen-Hoeksema & Corte, 2004). Moreover, specific relationships were highlighted between the perceived ability to control one's thoughts and measures of worries and obsessive-compulsive symptoms, suggesting that the French TCAQ possesses convergent validity.

Our study presents several limitations. The first resides in the fact that our samples were mostly made up of university students. In view of the evidence that people with more education differ from people with less education in terms of their self-regulation capabilities (Duckworth & Seligman, 2005), further research validating the TCAQ in nonstudent samples is clearly warranted. Another limitation of this study arises from the gender imbalance of our sample: The proportions of men were 28.5% (Study 1) and 26.0% (Study 2); in the study by Luciano et al. (2005), the corresponding proportion was 19.2%. The gender imbalance in our study is due to the low numbers of male students in the faculties and departments where the questionnaires were administered. Future research on the TCAQ and on mental regulation in general could clearly benefit from sampling more male participants.

In conclusion, the French adaptation of the Thought Control Ability Questionnaire has been shown to possess satisfactory psychometric properties. Luciano et al.'s (2005) study demonstrated that the TCAQ captures a distinct dimension of thought control that had not been adequately grasped by existing measures of mental self-regulation (WBSI: Wegner & Zanakos, 1994; TCQ: Wells & Davies, 1994). Furthermore, both the Luciano et al. (2005) study and our study have revealed that TCAQ scores are strongly correlated to measures of pathological states such as obsessive-compulsive symptoms and worry. The adapted French TCAQ may therefore be a valuable instrument for researchers and clinicians who are interested in exploring the role of mental control in different disorders.

We thank the authors of the original version of the TCAQ for giving us the permission to translate their

questionnaire. We also thank the instructors at the University of Geneva, who let the first author administer the questionnaires in their courses: Mireille Cifali, Pierre-André Dumont, Guido Gendolla, and David Sander. The French adaptation of the Thought Control Ability Questionnaire is available on request from the first author.

References

- Baumeister, R.F., & Vohs, K.D. (2004). *Handbook of self-regulation: Research, theory, and applications*. New York: Guilford.
- Beauducel, A., & Wittmann, W., W. (2005). Simulation study of fit indexes in CFA based on data with slightly distorted simple structure. *Structural Equation Modeling*, 12, 41–75.
- Bentler, P.M. (1995). *EQS structural equations program manual*. Encino, CA: Multivariate Software.
- Brewin, C.R. (2006). Understanding cognitive behaviour therapy: A retrieval competition account. *Behaviour Research and Therapy*, 44, 765–784.
- Briggs, S.R., & Cheek, J.M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality*, 54, 106–148.
- Cattell, R.B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, 1, 245–276.
- Clark, D.A., & Rhyno, S. (2005). Unwanted intrusive thoughts in nonclinical individuals. In D.A. Clark (Ed.), *Intrusive thoughts in clinical disorders: Theory, research, and treatment* (pp. 1–29). New York: Guilford.
- Cronbach, L.J. (1951). Coefficient α and the internal structure of tests. *Psychometrika*, 16, 297–334.
- Duckworth, A.L., & Seligman, M.E. (2005). Self-discipline out- does IQ in predicting academic performance of adolescents. *Psychological Science*, 16, 939–944.
- Foa, E.B., Huppert, J.D., Leiberg, S., Langner, R., Kichic, R., Hajcak, G. et al. (2002). The obsessive-compulsive inventory: Development and validation of a short version. *Psychological Assessment*, 14, 485–496.
- Gosselin, P., Dugas, M.J., Ladouceur, R., & Freeston, M.H. (2001). Evaluation des inquiétudes: Validation d'une traduction française du Penn State Worry Questionnaire [Evaluation of worry: Validation of a French translation of the Penn State Worry Questionnaire]. *L'Encéphale*, 27, 475–484.
- Horn, J.L. (1965). A rationale and test for the number of factors in factor analysis, *Psychometrika*, 30, 179–185.
- Howell, D. (1998). *Méthodes statistiques en sciences humaines [Statistical methods for psychology]*. Paris: De Boeck Université.
- Klinger, E. (1999). Thought flow: Properties and mechanisms underlying shifts in content. In J.A. Singer, & P. Salovey (Eds.), *At play in the fields of consciousness: Essays in the honour of Jerome L. Singer* (pp. 29–50). Mahwah, NJ: Erlbaum.
- Luciano, J., Algarabel, S., Tomás, J., & Martínez, J. (2005). Development and validation of the thought control ability questionnaire. *Personality and Individual Differences*, 38, 997–1008.
- McGraw, K.O., & Wong, S.P. (1996). Forming inferences about some intraclass correlation coefficients.

Psychological Methods, 1, 30–46.

Meyer, T.J., Miller, M.L., Metzger, R.L., & Borkovec, T.D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy*, 28, 487–495.

Nolen-Hoeksema, S., & Corte, C. (2004). Gender and self-regulation. In R.F. Baumeister, & K.D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications* (pp. 411–421). New York: Guilford.

R Development Core Team (2006). *R: A language and environment for statistical computing (Version 2.4.1)* [Computer software]. Retrieved from <http://www.r-project.org>. Vienna: R Foundation for Statistical Computing.

Raines-Eudy, R. (2000). Using structural equation modeling to test for differential reliability and validity: An empirical demonstration. *Structural Equation Modeling*, 7, 124–141.

Rassin, E. (2005). *Thought suppression*. Oxford: Elsevier.

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Test of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, 8, 23–74.

Schmidt, F.L., & Hunter, J.E. (1996). Measurement error in psychological research: Lessons from 26 research scenarios. *Psychological Methods*, 1, 199–223.

Steiger, J.H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, 25, 173–180.

Tucker, L., R. (1951). *A method for synthesis of factor analysis studies (Personal Research Section report No. 984)*. Washington, DC: Department of the Army.

Van Buuren, S. (2007). Multiple imputation of discrete and continuous data by fully conditional specification. *Statistical Methods in Medical Research*, 16, 219–242.

Wegner, D.M., & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personality*, 62, 616–640.

Wells, A., & Davies, M.I. (1994). The Thought Control Questionnaire: A measure of individual differences in the control of unwanted thoughts. *Behaviour Research and Therapy*, 32, 871–878.

Weston, R., & Gore, P.A., Jr. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, 34, 719–751.

Zermatten, A., Van der Linden, M., Jermann, F., & Ceschi, G. (2006). Validation of a French version of the Obsessive-Compulsive Inventory – Revised in a nonclinical sample. *European Review of Applied Psychology*, 56, 151–155.