

Psychometric properties of an Icelandic translation of the Basic Personality Inventory

Master's Thesis in Clinical Psychology

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Table of Contents

Acknowledgements	i
Abstract	ii
Introduction	1-6
Method	
Subjects	7
Instrument	8-9
Translation	9-11
Procedure	12-13
Results	14-27
Discussion	28-34
References	35-38
Table for age breakdown of the Icelandic samples	Appendix A
Approval letters for the study	Appendix B
The cover letter and consent form for participants	Appendix C
Endorsement proportion of items in keyed direction	Appendix D
Scale mean if item is deleted, scale variance if the item is deleted, corrected item-correlation, and alpha if the item is deleted	Appendix E

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Abstract

This study investigated the psychometric properties of an Icelandic translation of the Basic Personality Inventory (BPI), using a sample of 609 Icelandic teenagers. The translation procedure is described thoroughly in order to provide the reader with a basis with which to assess its impact on establishing an equivalent version. The Icelandic BPI item and scale characteristics are compared with available North America results. With only one exception a comparison of the scale means between Iceland and Canada, revealed between-country differences with the same magnitude as between provinces within Canada. The results from inter-item consistency measures, correlation matrices, and test-retest reliabilities are similar in both countries. The factor structure of both the Icelandic and the original version of the BPI is identical. The results from this initial study are promising in revealing a high degree of correspondence between psychometric properties of the Icelandic BPI and the English BPI. This is a promising initial indication that the existing empirical/clinical results with the English version of the BPI will be relevant to the Icelandic version.

Introduction

This study investigated the psychometric properties of an Icelandic translation of the Basic Personality Inventory (BPI; Jackson, 1989) using a high school sample in Iceland.

The BPI is a new twelve scale instrument for assessing psychological dysfunction. It was developed by using a modern strategy of scale construction with the aim of retaining the dimensions underlying the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1943). Whereas the empirical approach (e.g., Meehl, 1945) was used in the construction of the MMPI, the construct-oriented approach was used in the development of the BPI (Jackson, 1970, 1971; Wiggins, 1973). The construct-oriented approach strategy emphasizes: (1) the importance of psychological theory in constructing an item pool, (2) suppression of extraneous variance such as stylistic variance, (3) convergent and discriminant item selection procedures and validation, and (4) scale homogeneity and generalizability (Helmes & Holden, 1986; Holden, Fekken, Reddon, Helmes, & Jackson, 1988; Holden, Reddon, Jackson, & Helmes, 1983; Jackson & Reddon, 1987). The aims of the BPI development were also to use fewer items, to reduce response bias and correlation between scales, to maximize each item's association with the scale on which it was scored, and to avoid using pejorative labels as scale names (Jackson, 1989; Jackson & Hoffmann, 1987).

The construct-oriented approach used in the BPI development was applied by using a multivariate technique. Its construction was based on data (scale scores) from the MMPI and the Differential Personality Inventory (DPI; Jackson & Messick, 1986). The DPI is a 432 true-false item inventory for assessing psychopathology. It was developed by using the construct-oriented approach and consists of 28 scales: 26 clinical scales and two validity scales (Hoffmann, Jackson, & Skinner, 1975; Jackson, 1989). The procedure for the BPI construction has been outlined by Jackson (1989), and is briefly presented as follows: first, both the MMPI and DPI were administered to a sample of 282 alcoholic psychiatric patients (Hoffmann et al., 1975). Secondly, a complete principal component analysis of the MMPI was executed and the factor loadings were rotated so that only one scale loaded maximally on each orthogonal factor, using targeted orthogonal rotation (Schönemann, 1966). This generated 13 component factors based on their implicit factor score. The DPI was treated similarly and 11 principal component factors were extracted and rotated to an hypothesized pattern based on theoretical links of the DPI constructs to the MMPI scales. Thirdly, an intercorrelation matrix was generated between all 24 component based factors. This was followed by undertaking a second stage factor analysis and rotation (Jackson, 1975) in order to identify factors common to the DPI and MMPI. The latter procedure yielded 11 dimensions. The 11

BPI clinical scales were later derived from those dimensions and the twelfth scale, a critical item scale, was added (Jackson, 1989).

Research studies on the psychometric properties of the BPI indicate that the BPI is a strong psychometric tool. Holden et al. (1988) listed the studies on the psychometric properties of the BPI and they all revealed favourable results. These studies examined: scale internal consistency (Holden, Helmes, Fekken, & Jackson, 1985; Holden & Jackson, 1985; Holden et al., 1988; Holden et al., 1983), test-retest reliability (Holden et al., 1985), factor structure of the items (Holden et al., 1983), factor structure of the scales (Austin, Leschied, Jaffe, & Sas, 1986; Chrisjohn, Jackson, & Lanigan, 1984), item desirability and endorsement values (Reddon, Holden, & Jackson, 1983), and susceptibility to faking (Helmes & Holden, 1986).

Clinical applications (external validity) of the BPI are promising. Holden et al. (1988) investigated clinical reliabilities and validities using a sample of 112 adult psychiatric patients. The BPI scales were shown to possess both convergent and discriminant validity using clinical staff ratings as a criterion. The implication of these findings are substantial since it has been exceptionally challenging to identify evidence for convergent and discriminant validity. Rarely have these validities been reported for self-report multiphasic inventories of psychological dysfunction (Holden et al., 1988; Jackson, 1989). Research using young offenders further supports BPI clinical application. It has been shown to

be useful in differential assessment of young offenders. The BPI has some discriminative value in predicting recidivism, school behavioural problems, dangerousness, and degrees of previous delinquency (Austin et al., 1986; Jaffe, Leschied, Sas, Austin, & Smiley, 1985; Sas, Jaffe, & Reddon, 1985). Holden and Jackson (1985) have demonstrated, using an analogue population, that subscales of the BPI showed significant association with relevant peer ratings. Helmes and Barilko (1988) compared three multiscale inventories the--BPI, MMPI and Millon Clinical Multiaxial Inventory (MCMI; Millon, 1983)--for their ability to discriminate between the presence and absence of 11 symptoms of psychopathology. This comparison marginally favoured the BPI although none of the three tests showed a high level of discriminating power. Nevertheless, the BPI and MCMI were shown to be comparable to the MMPI, which is the dominant test in clinical psychology.

In summary, the BPI is a short format (240 items) instrument with fifth grade reading level (Reddon & Jackson, 1989), strong psychometric properties, and promising clinical utility for assessing adolescents, adults, and young offenders.

The most notable reason for cross-cultural adoption of personality inventories is to provide useful clinical assessment techniques for a second culture (Butcher, 1985). The existing empirical and interpretative body of knowledge for an inventory may be applicable to the new culture, and the adopted instruments may also serve useful

research purposes. Adolescent norms for the BPI available in North America are based on a pooled sample of adolescents drawn from two Canadian provinces, Alberta and Ontario. In Iceland there is a strong need for objective personality inventories for assessing adolescents and young offenders. Thus the purpose of this research was to develop an accurate Icelandic translation of the BPI, examine its item and scale characteristics, and to compare it with available North American results.

The importance of developing an accurate translation of items is essential and is considered to be the most important and the most complicated aspect of cross-cultural research with objective personality inventories. Yet, this stage often receives the least attention in cross-cultural research studies (Butcher and Pancheri, 1976). The importance of describing the translation procedure is crucial in order to assess the accuracy and equivalence of the translation. The results of a study in which no detailed description of translation procedures is provided might be flawed by the nonequivalence of the inventory translation rather than factors such as actual cross-cultural differences. Butcher (1982; Butcher and Garcia, 1978), and Brislin (1970; 1986) have prepared extensive translation procedures in order to obtain a good translation of an objective personality inventory. Butcher's work has especially focused on cross-cultural adaptation of the MMPI. He has prepared a very extensive and sophisticated procedure concerning the translation of an objective personality inventory (Butcher, 1982, p. 287).

Butcher's recommendations are briefly as follows: First, more than one translator is recommended and translators should independently translate the inventory. Independent versions can later be combined. Using more than one translator increases the likelihood of eliminating weak or inaccurate renderings. Second, a back-translation procedure (Brislin, 1970) is recommended. This involves using different bilingual(s) from those involved in the translation to translate the inventory back to the original language. This provides a means of assessing the equivalence of the translation by evaluating the discrepancies between the original and the back-translated version. Third, a field pretest is recommended to determine if any problems emerge with the translated materials. Fourth, a study of the translation itself is recommended in order to determine its adequacy, before the translated material is accepted. This includes having bilinguals answering both versions and comparing their responses, as well as determining whether the factor structures of the two language versions are comparable. Fifth, it is recommended that the reliability and validity of the translated inventory be demonstrated. This study followed these key recommendations.

Method

Subjects

A total of 629 teenagers completed the Basic Personality Inventory. Twenty inventories were judged invalid since each of them had more than 12 responses missing; thus the total sample was 609 teenagers (341 females and 268 males). The subjects ranged in age from 14 to 19 years old. The mean age was 16.2 years and the standard deviation was 1.6 years. The breakdown of age for the 609 teenagers is shown in Appendix A. The school system in Iceland differs somewhat from the North American system in age distribution. The 14-15 year old subjects were in elementary schools and the 16 to 19 year olds were in high schools. All subjects were recruited from schools in and around Reykjavik, Iceland.

Sixty subjects of the original 629 completed the BPI twice within a one month interval. A total of 59 students (one student had more than 12 responses missing and was dropped from the analysis) made up the subject pool for a test-retest group. These subjects (53 females and 6 males) were all from three psychology classes in the same high school in Reykjavik. The mean age was 17.8 years and the standard deviation was 1.3 years. The breakdown of age for the 59 students is shown in Appendix A.

Instrument

The test used was the Basic Personality Inventory (BPI). It is a 12-scale, 240-item, true and false inventory of psychopathology. It measures eleven clinical/substantive scales and one critical item scale (the Deviation scale). The Deviation scale has a set of heterogeneous critical items which provide an indication of the extent to which an individual displays unusual/bizarre behaviour.

Each of the eleven clinical scales has an equal number of positive and negative questions regarding the construct being measured. The clinical scales are named in order to minimize the risk of pejorative labelling. Neurotic tendencies are assessed by the scales Hypochondriasis, Depression, Anxiety, Social Introversion, and Self Depreciation. Dimensions of psychopathology are assessed by the scales Persecutory Ideas, Thinking Disorder, and Deviation. Aspects of sociopathic behaviour are assessed by the four scales of Denial, Interpersonal Problems, Alienation, and Impulse Expression.

Three higher order factor scales have been identified and replicated by factor analysis using an adult psychiatric population, high school normals, juvenile delinquents (Chrisjohn et al., 1984), and young offenders (Austin et al., 1986). These factors are: Psychiatric Symptomatology (Hypochondriasis, Persecutory Ideas, Anxiety, Thinking Disorder, and Deviation), Social Symptomatology

(Interpersonal Problems, Alienation, and Impulse Expression), and Depression (Depression, Social Introversion, and Self-Depreciation).

Translation

The instructions for the BPI were translated by a team of four translators. The translation procedure for the 240 questions was based on the key recommendations of Butcher (1982, p. 287) which are summarized in the introductory section. Steps were taken in order to minimize the danger of a biased and badly conducted translation. Specifically, the translation procedure was as follows:

Step 1. The 20 questions that comprise each scale on the BPI were grouped in the order they appear in the inventory. This helped the translators since they had all items for each scale gathered into one cluster and information about the underlying dimension or construct that each item was designed to measure. Any item that was difficult to translate could be easily compared with the construct it was intended to measure as an aid to translation.

Six translators working in three dyads translated the BPI into Icelandic. All translators were bilingual and Icelandic was their first language. Five had at least a BA degree in psychology and the sixth was a nurse. The dyads were located in different cities. Each translator was instructed to keep the meaning as intact as possible, to keep the reading level about 5th grade level (so that 10 to 12 year olds could easily read

and comprehend the items), and to keep the sentence structure simple and short. There was initially no discussion between dyads although the partners of each dyad were expected to assist each other. The three dyads produced three translated copies of the BPI. These copies were reviewed by the author and an Icelandic translation of each item was listed along with the English version whenever there was exact or very close correspondence between items. Whenever significant discrepancies in translation occurred, all discrepant Icelandic versions of that item were listed along with the original English item. This working copy was mailed to all the translators and they reviewed all items. Every translated item on the BPI was then discussed by five of the translators in a conference call. In general, the items that revealed some discrepancies were discussed the most, although some discussion emerged on items which had close correspondence. The first Icelandic translated version was arrived at through these discussions, resolving discrepancies by consensus and/or majority voting. These discussions between translators and subsequent decisions minimized weak or inaccurate renderings.

Step 2. A seventh bilingual translator, who had not seen the English BPI, translated the first Icelandic version back to English.

Each item on the original English BPI and the back-translated version were examined independently by two individuals who had English as a first language and did not speak Icelandic. The task was to

identify items which appeared discrepant and to pin-point the words, phrases or nuances producing the discrepancies. This resulted in a total of 104 items that one or both English speaking reviewers considered discrepant. Four of the original translators examined these items and agreed on 18 items which needed to be changed; these were subsequently modified. The discrepancies of the other 86 items were either attributed to mistakes in the back-translation or it was argued that the meaning had been successfully captured in the Icelandic version. This modification provided a revised Icelandic version which maximized the equivalence of meaning between the two versions. Two experts in the Icelandic language proof-read this revised Icelandic version in order to screen out grammatical errors and/or awkwardness. The wordings of 14 items were changed upon their recommendations to make the items read better without changing the meaning of the items.

Step 3. The final step in the translation involved carrying out a field pretest of the revised Icelandic version of the BPI. Ten Icelandic teenagers (ranging in age from 14 to 18 years old) were asked to comment on any items which they found ambiguous or difficult to understand. This did not reveal any item that needed to be changed and suggested that the readability and comprehensibility of the translated BPI items were good.

Procedure

The translated version of the BPI was administered to classes of 15 to 30 students. All students received the BPI standard instructions translated into Icelandic before answering the items on the BPI. In order to obtain a test-retest reliability coefficient which could be compared with existing Canadian results, 59 students answered the translated version of the BPI twice within a one month interval.

Permission required. The execution of this research depended on approval from three institutions. In Canada, permission was obtained from the “Lakehead University Ethics Advisory Committee to the Senate Research Committee.” In Iceland, permission was obtained from: “The Ministry of Education,” and “The Data Protection Commission.” Permission for using the translated version of the BPI was also obtained from the publisher, “The Research Psychologist Press.” All the above approval letters are shown in Appendix B.

Ethical procedure and considerations. Before participating in this study, all students were asked to carefully read an informative cover letter stating the nature and purpose of the research. They were then asked to sign an informed consent form. If they were under 16 years old they also had to obtain parental permission. The cover letter and the consent form are shown in Appendix C. The cover letter also included the following information: “Your answers will not be revealed to anyone, although there are limits to confidentiality when a person

indicates an intention to harm himself or others.’’ This was included in order to inform participants that the confidentiality might be breached since the BPI has some items that question about suicide intention and intention of doing something dangerous. The author reviewed one item for all students--an item stating that they have been planning to commit suicide. Forty students answered affirmatively to that item. Two additional items containing further indications of serious dissatisfaction with life were reviewed for those forty students in order to further assess suicide intention. These forty students were all contacted by the author, either by telephone or with an interview. The purpose of this contact was to assess the seriousness of these responses and to offer counselling through their school, if it seemed warranted. Fifteen students agreed to go for counselling. Two students in addition were assessed to be in serious danger. They were not willing to go for counselling, so their parents were informed of the situation and directed to the school counsellor. The remaining 23 students were not considered to be in danger of harming themselves.

Results

Comparison samples. The data analysis involved comparing item and scale characteristics from the translated BPI with similar statistics from Canadian teenager samples. These samples were from Alberta (mean age=16.7; Reddon, 1980) and from Ontario (mean age for males=14.7 and mean age for females=14.8; Smiley, 1977). These two Canadian samples combined make up the adolescent norm group for the BPI. Smiley studied both juvenile delinquent and normal teenagers in Ontario, but only the sample of normal high school students was used for comparative purposes. The Alberta sample is comprised of both rural and urban high school students in Alberta. The overall mean age of the Icelandic high school sample (16.2 years), as well as the breakdown of male and female mean ages (16.1 and 16.3, respectively), was quite similar to the Alberta sample. The average age of the Ontario sample for both males and females was about one and a half years younger than in the Icelandic sample. Combined data (males and females) were not available from the Ontario sample. Thus, the gender combined data from Iceland was compared with the Alberta combined gender data.

The Icelandic test-retest reliabilities were compared with reliability statistics from a sample of college students with the mean age of 21.1 years (Holden et al., 1985).

The factor structure of the translated BPI was compared with factor analytic results from samples of adult psychiatric patients, high school normals, juvenile delinquents (Chrisjohn et al., 1984), and young offenders (Austin et al., 1986).

Scale statistics. Table 1 shows the means and standard deviations of the BPI scales for the combined Icelandic and the combined Alberta high school samples.

Table 1

The scale means and standard deviations for two combined high school samples

Scales	Iceland (N=609) (age=16.2)		Alberta* (N=1,444) (age=16.7)		(Difference)
	M	SD	M	SD	
Hypochondriasis	6.49	3.8	6.39	3.8	(.10)
Depression	4.42	3.7	4.94	3.5	(-.52)
Denial	5.63	2.7	5.43	2.8	(.20)
Interpersonal Problems	9.54	3.3	10.18	3.7	(-.64)
Alienation	5.66	3.4	6.64	3.6	(-.98)
Persecutory Ideas	6.23	3.2	7.33	3.6	(-1.10)
Anxiety	7.34	3.7	8.30	3.1	(-.96)
Thinking Disorder	3.48	2.9	5.28	3.4	(-1.80)
Impulse Expression	9.91	4.2	10.17	3.9	(-.26)
Social Introversion	5.13	3.1	4.84	3.6	(.29)
Self Depreciation	3.98	3.3	3.73	3.0	(.25)
Deviation	3.47	2.4	5.04	2.7	(-1.57)

Note. *From Reddon (1980); age=mean age; M=scale means; SD=standard deviations; Difference=differences between the Icelandic means and the Canadian means; a negative value means that the Icelandic mean is lower than the Canadian.

As can be seen in Table 1, teenagers (combined, male and female) in the Icelandic sample had lower means on most of the BPI scales (total of 9 scales) compared with the Alberta teenagers. Icelandic and Alberta scale means were compared using a simple z test and Alberta means and standard deviations as population parameters. Raw data from Alberta

Table 2

The scale means and standard deviations according to gender for three high school samples

Scales	Males						Females									
	Iceland (n=268) (age=16.1)		Alberta* (n=602) (age=16.7***)		Ontario** (n=278) (age=14.7)		Iceland (n=341) (age=16.3)		Alberta* (n=842) (age=16.7***)		Ontario** (n=538) (age=14.8)					
	M	SD	M	SD	(Diff)	M	SD	(Diff)	M	SD	M	SD	(Diff)	M	SD	(Diff)
Hyp	5.12	3.2	5.56	3.3	(-.44)	3.83	3.1	(1.29)	7.57	3.9	6.99	4.0	(.58)	4.66	3.5	(2.91)
Dep	4.06	3.1	5.08	3.3	(-1.02)	3.29	3.2	(.77)	4.70	4.0	4.85	3.7	(-.15)	3.39	3.8	(1.31)
Den	6.05	2.8	5.89	2.9	(.16)	6.98	3.0	(-.93)	5.30	2.5	5.10	2.6	(.20)	6.50	2.9	(-1.20)
IPs	9.49	3.4	11.29	3.5	(-1.80)	9.92	3.5	(-.43)	9.57	3.2	9.39	3.7	(.18)	9.28	3.6	(.29)
Aln	6.77	3.6	8.43	3.5	(-1.66)	6.88	3.8	(-.11)	4.79	2.9	5.36	3.1	(-.57)	4.98	3.0	(-.19)
PId	6.00	3.0	7.80	3.4	(-1.80)	7.07	3.5	(-1.07)	6.40	3.3	7.01	3.6	(-.61)	7.07	3.5	(-.67)
Axy	6.16	3.1	7.40	2.8	(-1.24)	5.64	3.2	(.52)	8.27	3.8	8.94	3.1	(-.67)	7.74	3.7	(.53)
ThD	2.93	2.3	4.98	3.3	(-2.05)	4.96	3.2	(-2.03)	3.91	3.2	5.50	3.4	(-1.59)	5.44	3.2	(-1.53)
ImE	9.81	4.2	10.63	3.6	(-.82)	9.39	3.9	(.42)	9.99	4.2	9.84	4.0	(.15)	9.35	4.0	(.64)
SoI	5.72	3.1	5.88	3.8	(-.16)	5.29	3.8	(.43)	4.67	3.0	4.10	3.2	(.57)	4.04	3.2	(.63)
SDp	3.57	3.2	4.05	3.2	(-.48)	2.66	2.8	(.91)	4.30	3.4	3.50	2.8	(.80)	2.82	3.1	(1.48)
Dev	3.00	2.3	5.31	2.8	(-2.31)	3.47	2.6	(-.47)	3.85	2.3	4.85	2.6	(-1.00)	3.69	2.5	(.16)

Note. *From Reddon (1980); **From Smiley (1977). ***Approximate mean age since it was not available from Reddon's data. age=mean age; M=scale means; SD=standard deviations; Diff=differences between the Icelandic means and the Canadian means; a negative value means that the Icelandic mean is lower than the Canadian.

Scale abbreviations: Hyp=Hypochondriasis; Dep=Depression; Den=Denial; IPs=Interpersonal Problems; Aln=Alienation; PId=Persecutory Ideas; Axy=Anxiety; ThD=Thinking Disorder; ImE=Impulse Expression; SoI=Social Introversion; SDp= Self Depreciation; Dev=Deviation.

was not obtained. Hence, a multivariate analysis of mean scale differences could not be conducted. The z test revealed that eight scale mean differences of $\geq .28$ were significantly different between the combined samples in Iceland and in Alberta (.05 significant level, two-tailed). However only three scale mean differences (Persecutory Ideas, Thinking Disorder, and Deviation) exceeded 1.0 raw score point.

As can be seen in Table 2, gender scale means were similar between the two countries (Iceland versus Alberta and Ontario). Eight of the Icelandic scale means for males were between the Alberta and Ontario scale mean values. The mean for Deviation was 2.31 raw score points lower for males in Iceland compared with the Alberta male sample, and this was the largest male difference. The Ontario mean for the same scale for males was 1.84 raw score points lower than the Alberta mean for males. The mean scale score for males in Iceland on Thinking Disorder was just over 2.0 raw score points lower in the Icelandic sample than in both the Alberta and the Ontario male samples.

For females, four Icelandic scale means were between the mean values for Alberta and Ontario. The mean for Hypochondriasis was 2.91 raw score points higher for females in the Icelandic sample compared with the Ontario female sample, and this was the largest female difference. But the female mean for the same scale in Alberta was also 2.33 raw score points higher than the Ontario mean for females. The second highest female difference between countries was

for Thinking Disorder. Icelandic females revealed a scale mean that was more than 1.5 raw score points lower than in both the Alberta and Ontario samples.

Smiley (1977) examined gender differences for the 12 BPI scales in the Ontario sample. Data on gender differences were not available for the Alberta sample. For comparative purposes a between-gender multivariate analysis of variance (MANOVA) was carried out for the Icelandic data. The MANOVA was significant and the overall $F(12, 596)$ was 21.67, $p < .001$. The univariate tests revealed significant sex differences for nine scale means in the Icelandic sample. Table 3

Table 3

Scale means that were significantly higher than means from the opposite gender in Iceland and Ontario

Males higher than females		Females higher than males	
Iceland ($n=268$) (age=16.2)	Ontario ^o ($n=278$) (age=14.7)	Iceland ($n=341$) (age=16.3)	Ontario ^o ($n=538$) (age=14.8)
Denial***	Denial+	Hypochondriasis***	Hypochondriasis+++
Alienation***	Alienation+++	Anxiety***	Anxiety+++
Social Introversion***	Social Introversion+++	Thinking Disorder***	Thinking Disorder+
	Interpersonal Problems++	Depression*	
		Self Depreciation**	
		Deviation***	

Note. ^oFrom Smiley (1977); + $p < .05$; ++ $p < .01$; +++ $p < .001$ (univariate Fs were not available for Smileys' data).
 Univariate Fs: * $F(1, 607)=4.67$, $p < .05$; ** $F(1, 607)=7.21$, $p < .01$;
 *** $F(1, 607)$ ranged from 11.80 to 68.24, $p < .001$.

summarizes the results from the Ontario and Icelandic samples. Males scored significantly higher than females in both the Icelandic and Ontario samples on three scales: Denial, Alienation, and Social Introversion. The males in the Ontario sample, in addition, scored significantly higher than Ontario females on Interpersonal Problems. The females in both the Icelandic and Ontario samples scored significantly higher than males on three scales: Hypochondriasis, Anxiety, and Thinking Disorder. The females in the Icelandic sample, in addition, scored significantly higher than their male counterparts on Depression, Self Depreciation, and Deviation.

Inter-item consistency. As an indication of the inter-item consistency, the Kuder-Richardson (KR-20) was calculated for each of the 12 subscales of the translated BPI. The data was prepared for the dichotomous format required for the KR-20s calculations in the following way. Any subject that had more than one response missing for a scale was dropped from the analysis of the KR-20 for that scale. For those subjects missing only one response per scale, the missed item was scored either positive or negative so that it did not load on the particular scale. This was done since the Icelandic means on each scale were less than 10.0 raw score points; the highest possible raw score total being 20. Therefore, it seemed more likely that on average these responses would have been in the non-affirmative for a particular scale had the item been answered. A similar procedure for dealing with

missing responses was used in the Alberta sample when calculating KR-20 indices. Holden et al. (1983) reported scoring missed items as negative, although it was not clear whether this meant false in all instances or in a non-keyed direction. The KR-20s inter-item consistency measures for the Icelandic sample and the Alberta sample are reported in Table 4.

Table 4

KR-20s in Iceland and Canada (Alberta)

Scales	Iceland	Alberta*	Difference
	N=609 mean age=16.2	N=1,444 mean age=16.7	
Hypochondriasis	.77	.77	(.00)
Depression	.83	.80	(.03)
Denial	.55	.61	(-.06)
Interpersonal Problems	.65	.72	(-.07)
Alienation	.72	.72	(.00)
Persecutory Ideas	.70	.73	(-.03)
Anxiety	.74	.57	(.17)
Thinking Disorder	.71	.72	(-.01)
Impulse Expression	.78	.74	(.04)
Social Introversion	.72	.79	(-.06)
Self Depreciation	.78	.74	(.04)
Deviation	.65	.66	(-.01)

Note. *From Reddon (1980) and also cited in Holden et al. (1983).
Difference=differences between the Icelandic means and the Canadian means;
a negative value means that the Icelandic mean is lower than the Canadian.

The Icelandic scales' inter-item consistency reliabilities are very similar to the Alberta results. The means of the inter-item consistencies for the Icelandic and the Canadian samples were almost identical (.717 and .713, respectively). All differences were marginal with the

exception of the reliability coefficient for Anxiety which was .17 higher in the Icelandic sample compared with the Alberta sample.

Test-retest coefficients. The test-retest reliability coefficients were calculated for the Icelandic sample. Test-retest coefficients were not available for the Ontario nor for the Alberta sample. The Icelandic test-retest results were thus compared with test-retest results reported in Holden et al. (1985). The sample from Holden et al. (1985) was derived from 127 college students. In both the Icelandic and the Holden et al. samples the subjects answered the BPI within a 30 day interval. The test-retest coefficients for both samples are listed in Table 5.

Table 5

One month test-retest coefficients for two samples

	Iceland	Canada*	
	N=59 age=17.8 SD=1.3	N=123 age=21.1 SD=5.0	
Scales			Difference
Hypochondriasis	.84	.73	(.11)
Depression	.79	.85	(-.06)
Denial	.67	.63	(.04)
Interpersonal Problems	.71	.77	(-.06)
Alienation	.81	.77	(.04)
Persecutory Ideas	.79	.78	(.01)
Anxiety	.66	.78	(-.12)
Thinking Disorder	.65	.71	(-.06)
Impulse Expression	.83	.78	(.05)
Social Introversion	.87	.87	(.00)
Self Depreciation	.84	.77	(.07)
Deviation	.73	.69	(.04)

Note. *From Holden et al. (1985); A negative value in Difference means that the Icelandic mean is lower than the Canadian.

Even though the sample used in Iceland is small with a biased sex distribution (53 females and 6 males), it gives some indication that the translated BPI reveals similar test-retest reliability coefficients as does the Canadian sample. The difference between the two versions were marginal, except for Hypochondriasis which was higher (.11) in the Icelandic sample, and for Anxiety which was higher (.12) in the Canadian sample.

Intercorrelation matrices. The scale intercorrelation matrices for male and female samples were calculated for the Icelandic sample.

Table 6

Male teenagers: Intercorrelation Matrices of BPI scales, Iceland and Ontario*

Scales	Hyp	Dep	Den	IPs	Aln	PId	Axy	ThD	ImE	SoI	SDp	Dev
Hyp		.38	-.28	.21	.22	.41	.43	.36	.29	.07	.29	.48
Dep	.50		-.18	.17	.35	.53	.44	.29	.30	.42	.61	.45
Den	-.18	-.21		-.33	-.35	-.27	-.32	-.20	-.48	-.02	-.13	-.25
IPs	.27	.31	-.34		.49	.35	.27	.31	.45	.06	.17	.41
Aln	.30	.41	-.26	.42		.45	.27	.31	.56	.17	.28	.51
PId	.46	.58	-.39	.38	.43		.47	.38	.46	.23	.46	.51
Axy	.49	.42	-.32	.26	.16	.42		.28	.36	.19	.41	.39
ThD	.43	.36	-.27	.23	.21	.44	.36		.35	.10	.25	.55
ImE	.28	.37	-.38	.44	.48	.39	.27	.33		.08	.30	.50
SoI	.30	.48	-.01	.22	.26	.34	.24	.07	.15		.38	.16
SDp	.34	.65	-.10	.14	.40	.43	.28	.27	.33	.50		.39
Dev	.55	.60	-.23	.37	.52	.54	.37	.56	.47	.19	.49	

Note. *From Smiley, 1977; Scale intercorrelations for Icelandic males ($n=268$; mean age=16.1) appear above the major diagonal, intercorrelations for Canadian males ($n=278$; mean age=14.7) appear below. Scale abbreviations: Hyp=Hypochondriasis; Dep=Depression; Den=Denial; IPs=Interpersonal Problems; Aln=Alienation; PId=Persecutory Ideas; Axy=Anxiety; ThD=Thinking Disorder; ImE=Impulse Expression; SoI=Social Introversion; SDp= Self Depreciation; Dev=Deviation.

These results were compared with the intercorrelation matrices for the Ontario sample. The scale intercorrelation matrices were not available

for the Alberta sample. The scale intercorrelation matrices for male and female samples from Iceland and Ontario are presented in Table 6 and Table 7. Both Table 6 and Table 7 reveal similar trends in both the Icelandic and Ontario teenager samples. The direction of interscale correlation (i.e. positive and negative correlation) are the same for males and females in both samples, with one exception. The interscale correlation between Social Introversion and Denial for females in the Icelandic sample was .01, whereas it was -.14 for Ontario females. For males these particular correlations were almost identical; -.01 in Iceland and -.02 in Ontario.

Table 7

Female teenagers: Intercorrelation Matrices of BPI scales, Iceland and Ontario*

Scales	Hyp	Dep	Den	IPs	Aln	PId	Axy	ThD	ImE	SoI	SDp	Dev
Hyp		.47	-.33	.41	.32	.56	.51	.51	.32	.14	.34	.56
Dep	.51		-.16	.30	.36	.59	.47	.33	.28	.45	.67	.57
Den	-.28	-.24		-.39	-.35	-.28	-.31	-.18	-.40	.01	-.15	-.23
IPs	.27	.33	-.35		.41	.35	.36	.30	.46	.07	.22	.41
Aln	.28	.39	-.35	.55		.44	.28	.36	.44	.15	.37	.43
PId	.50	.59	-.33	.38	.42		.54	.52	.39	.26	.54	.59
Axy	.50	.44	-.43	.31	.25	.53		.42	.30	.21	.35	.45
ThD	.47	.39	-.17	.23	.28	.48	.39		.43	.10	.25	.60
ImE	.39	.39	-.40	.51	.48	.40	.35	.37		.04	.30	.47
SoI	.23	.42	-.14	.17	.21	.34	.32	.11	.05		.54	.18
SDp	.40	.64	-.28	.28	.38	.51	.46	.34	.42	.47		.40
Dev	.54	.54	-.18	.37	.43	.54	.43	.58	.48	.22	.49	

Note. *From Smiley, 1977; Scale intercorrelations for Icelandic females ($n=341$; mean age=16.3) appear above the major diagonal, intercorrelations for Canadian females ($n=538$; mean age=14.8) appear below.

Scale abbreviations: Hyp=Hypochondriasis; Dep=Depression; Den=Denial; IPs=Interpersonal Problems; Aln=Alienation; PId=Persecutory Ideas; Axy=Anxiety; ThD=Thinking Disorder; ImE=Impulse Expression; SoI=Social Introversion; SDp= Self Depreciation; Dev=Deviation.

The average interscale correlation for males was .33 in the Icelandic sample and .35 in the Ontario sample. For females the average interscale correlation was .36 in the Icelandic sample and .38 in the Ontario sample. If correlations with the Deviation scale are excluded, as it is a critical item scale and may have high correlations with many other scales, the average scale intercorrelation dropped to .31 for males in the Icelandic sample and .33 in the Ontario sample for males. For females, the average interscale correlation dropped to .34 in the Icelandic sample and .36 in the Ontario sample, excluding correlations with the Deviation scale. These mean correlations are similar as can be demonstrated by the Fisher Z test (Fisher, 1922). Only 4.5 percent of the interscale correlations are significantly different between Iceland and Ontario for males and 9 percent for females. The highest interscale correlation occurred for the same two scales in all samples. Specifically, Depression and Self Depreciation were the only interscale correlations that exceeded .60. Their exact values were: .67, .64, .61, and .65 for the Icelandic female, Ontario female, Icelandic male, and Ontario male samples respectively.

Factor analysis. Factor analysis of the Icelandic raw scores using principal component analysis with varimax rotation provided three factors. Both a Scree diagram of eigenvalues (Cattell, 1966) and an eigenvalue criteria (greater than 1) for factor selection supported a three

factor explanation. Factor loadings are reported in Table 8, along with eigenvalues and the variance explained by each factor.

Table 8

Principal component analysis using varimax rotation of the translated BPI

	Factor loadings		
	Factor 1	Factor 2	Factor 3
Hypochondriasis	.83	.13	.05
Anxiety	.73	.14	.18
Thinking Disorder	.69	.25	.04
Deviation	.67	.38	.23
Persecutory Ideas	.59	.33	.41
Alienation	-.02	.76	.34
Impulse Expression	.28	.75	.09
Interpersonal Problems	.23	.71	.04
Social Introversion	-.07	.00	.83
Self-Depreciation	.36	.13	.74
Depression	.50	.12	.68
Eigenvalue	4.9	1.5	1.2
Percentage of variance	40.9	12.7	9.8

The higher order factors extracted from the translated version are identical with factors reported by Chrisjohn et al. (1984). In both studies, the scales Hypochondriasis, Persecutory Ideas, Anxiety, Thinking Disorder, and Deviation loaded high on Factor 1 (Psychiatric Symptomatology). The scales Interpersonal Problems, Alienation, and Impulse Expression loaded high on Factor 2 (Social Symptomatology), and the scales Depression, Social Introversion, and Self-Depreciation

loaded high on Factor 3 (Depression). Austin et al. (1986) obtained similar factor loadings, but the order of Factor 2 and 3 were reversed compared with those reported by Chrisjohn et al. and those obtained in this study.

Item statistics. The following item analyses were undertaken. The endorsement proportions or probabilities of a response in the keyed direction are listed in Appendix D. Appendix E lists for each item: scale mean if the item is deleted, scale variance if the item is deleted, corrected item-total correlation, and alpha if the item is deleted. Corrected item-total correlation is the coefficient between the score on the item and the sum of the scores of the remaining items on that scale. Alpha is the alpha for each scale when the item of interest has been deleted.

The results from item analyses are useful in studying the translated BPI and in comparing it with the English version. This could be helpful in evaluating the translation of items on the scale Thinking Disorder which was the only scale on the translated BPI that showed consistently lower scores than the Canadian results. For example, the Icelandic endorsement proportions for the 20 items can be compared with the endorsement proportions from Reddon's high school sample (reported in Appendix B in the BPI manual; Jackson, 1989). Almost all the items in the Icelandic version were endorsed consistently less often than by Reddon's subjects although three items for Icelandic females were

endorsed slightly more than by Alberta females. This piece of information needs to be considered with other item statistics, and gender and cross-cultural differences to determine whether these or other items on Thinking Disorder are valid.

Discussion

This study set out to investigate the psychometric properties of an Icelandic translation of the BPI. Preliminary data analyses revealed that the Icelandic translation of the BPI succeeded in capturing many of the psychometric properties of the English BPI. The steps carried out in the translation of the BPI seemed to have resulted in a translation with a promising degree of accuracy and equivalence. These steps were described thoroughly in order to provide the reader with a basis from which to assess the translation procedure and its impact on establishing an equivalent translated version.

The between-country differences for the gender combined samples (Iceland and Alberta) revealed only three scale means differences that were higher than 1.0 raw score point. The between-country differences for gender were quite limited. Four gender means showed an absolute difference between Iceland and Canada of more than 2.0 raw score points. Two of the differences, Hypochondriasis (for females) and Deviation (for males), revealed differences of more than 2.0 raw score points between the Icelandic sample and one Canadian sample. The other Canadian sample for that gender revealed similar scores as in the Icelandic sample. Thus, between-country differences on these two scales were similar to sample differences within Canada. Thinking Disorder, showed consistently lower scores for both females and males in the

Icelandic sample compared with Canadian results. The scale means for Icelandic males were, on average, 2.0 raw score points lower for Thinking Disorder than they were in both Alberta and Ontario. The Icelandic females were 1.5 raw score points lower than both Alberta and Ontario. Thus, Thinking Disorder showed a consistent and noteworthy difference between the two countries. As would be expected given the gender results, Thought Disorder was the most discrepant scale when gender combined means for that scale were compared between Iceland and Alberta. The items on this scale contain unusual content designed to assess thought disturbance. The psychological meaning of some of the items measuring Thinking Disorder might have been subtly changed in the translation. Other factors such as cross-cultural differences could also explain this difference. These explanations need further investigation. In addition to pursuing item statistics (e.g., endorsement proportions), the equivalence of the translation could be pursued by obtaining a sufficient number of bilinguals to answer both versions. Answers could be examined for discrepancies at an item level. This, in fact, will be assessed by Björgvinsson and Thompson (in progress). They have asked 250 adult bilinguals to complete the original and the translated version of the BPI with about a one month interval in counterbalanced order. These procedures will enable further analysis of the equivalence of the overall translation, and in particular further investigation of the Thinking Disorder items.

Significant within country gender differences between scale means were similar. In both Iceland and Ontario samples, males and females scored significantly higher than the opposite gender on the same three scales. For females these scales were Hypochondriasis, Anxiety, and Thinking Disorder. The scales for males were Denial, Alienation and Social Introversion. This reveals similar trends for gender differences in both samples. In addition, the Icelandic females scored significantly higher than males on three scales (Depression, Self Depreciation, and Deviation). Males in Ontario scored higher than females on one scale (Interpersonal Problems) which did not occur in the Icelandic sample. These differences, especially for females, might indicate some gender difference between countries which would have to be explored further in cross-cultural studies. The main results are promising in revealing similar gender differences within both countries.

The mean of the inter-item consistencies for the Icelandic and the Alberta samples were almost identical (.717 and .713, respectively). The reliability measures ranged from .55 to .83 in the Icelandic sample and from .57 to .80 in the Canadian sample. Holden et al. (1985) point out that this might appear as low inter-item consistency measures for the 20 item scales on the BPI. However, they further argued that a high school or a college population tends to show restricted scale range and variance on such measures of psychopathology. Thus, these samples can be said to reveal satisfactory levels on the reliability measure.

Inter-item consistency is sometimes used as the only indication of a scale's homogeneity. This application of the reliability measures (e.g., KR-20 and Cronbach's alpha) has proven to be unacceptable as the only measure to assess unidimensionality/ homogeneity of a scale (e.g., Boyle, 1991; Green, Lissitz, & Mulaik, 1977; Hattie, 1985). Although it can be said that the more homogeneous the scale is, the higher the inter-item consistency, the reverse does not necessary hold. A higher inter-item consistency does not necessarily lead to higher homogeneity. There is a clear distinction between these two concepts, but they are sometimes used as if they were the same (Green et al., 1977). Inter-item consistency refers to the degree of interrelatedness or covariation among items measuring a dimension or personality construct. Homogeneity, on the other hand, refers to instances where a set of items all measure a single dimension. The average inter-item correlation and the number of items are used to derive an inter-item consistency measure such as the KR-20. This will provide a high inter-item consistency when a general factor runs through the items of the scale. But, high inter-item consistency may also be derived when no general factor runs through the items. Instead the item variance is determined by several common factors. Therefore inter-item consistency does not necessarily permit inferences regarding the homogeneity of a scale (Green et al., 1977).

The limitation of inter-item consistency measures is valid and worth taking into account. The construct-oriented approach used in the

BPI development (Jackson, 1970; 1971; Wiggins, 1973) deals thoroughly with these issues. It emphasizes assessing the unidimensionality of scales by various means, with inter-item consistency being only one approach. By using an orthogonal confirmatory rotation for three samples, Holden et al. (1983) demonstrated that 96, 99, and 98 percent of the items loaded appropriately on their respective scales. They found the empirical item structure of the BPI to be congruent with the hypothesized structure, with keyed items showing much higher loadings than non-keyed items. This convergent and discriminant structure for the BPI at the item level has not been reported to this degree for published objective personality inventories assessing psychopathology (Jackson, 1989). The overall items, scale, and factor analytical results suggests that the convergent and discriminant structure of the English BPI that emerged from the construct-oriented approach seem to be similar for the Icelandic version.

The average scale intercorrelation in the Icelandic sample (excluding the Deviation critical item scale) was, .31 for males and .33 for females, both being marginally lower than in the Ontario sample. These results indicate that the interscale correlations were similar in the Icelandic sample and the Ontario sample.

The one month test-retest coefficients from the two countries revealed very similar results. This indicates that the one month stability of the scale scores is very similar in both countries.

One of the most important aspects of evaluating the adequacy of a translated instrument is to compare its factor structure with the original version (Butcher & Pancheri, 1976). The factor structure of both the Icelandic and the original version of the BPI is identical. Both revealed three higher order factors which have been named Psychiatric Symptomatology, Social Symptomatology, and Depression (Chrisjohn et al., 1984). This strongly supports the conclusion that the Icelandic BPI is measuring the same factors as the Canadian and further supports the accuracy of the translation.

Limitations. This thesis was a preliminary analysis of the items, scale, and factor structure of the translated BPI based upon comparison with summary results that had been reported for teenagers and other populations. Ideally, the comparison should continue by comparing the results with the complete data base of the adolescents norm group. Another limitation of this study is that it can only be assumed, but not proven, that the high school samples used in the comparison are similar since no detailed demographic information was available for the samples. It should also be mentioned that the instructions for the BPI did not receive the same degree of rigorous translation as did the items. However a team of four bilinguals translated the instructions which should have been sufficient since these instructions are straight forward and easily translated.

Clinical application of the translated BPI should await further and more thorough analysis of the psychometric properties of the BPI translation. The results from this initial study are promising in revealing a high degree of correspondence between psychometric properties of the translated BPI and the English BPI. As outlined above, Björgvinsson and Thompson (in progress) will collect further data and analyze the BPI translation for items.

The results provide a promising initial indication that the empirical/clinical results available with the English version of the BPI will be relevant to the Icelandic translated version. The Icelandic version of the BPI has been revealed to possess sufficient and promising quality to be used for research and cross-cultural studies in Iceland.

References

- Austin, G. W., Leschied, A. W., Jaffe, P. G., & Sas, L. (1986). Factor structure and construct validity of the Basic Personality Inventory with juvenile offenders. Canadian Journal of Behavioural Science, *18*, 238-247.
- Björgvinsson, T., & Thompson, A. P. (in progress). The equivalence of an Icelandic translation of the Basic Personality Inventory.
- Boyle, G. J. (1991). Does item homogeneity indicate internal consistency or item redundancy in psychometric scales? Personality and Individual Differences, *12*, 291-294.
- Brislin, R. W. (1970). Back-translation for cross-cultural research. Journal of Cross-Cultural Psychology, *1*, 185-216.
- Brislin, R. W. (1986). The wording and translation of research instruments. In W. J. Lonner & J. W. Berry (Eds.), Field methods in cross-cultural research (pp. 137-164). California: Sage Publications.
- Butcher, J. N. (1982). Cross-cultural research methods in clinical psychology. In P. C. Kendall & J. N. Butcher (Eds.), Handbook of research methods in clinical psychology (pp. 273-308). New York: John Wiley.
- Butcher, J. N. (1985). Current developments in MMPI use: An international perspective. In J. N. Butcher & C. D. Spielberger (Eds.), Advances in personality assessment: Vol. 4 (pp. 83-94). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Butcher, J. N., & Garcia, R. E. (1978). Cross-national application of psychological tests. Personnel and Guidance Journal, *56*, 472-475.
- Butcher, J. N., & Pancheri, P. (1976). Handbook of cross-national MMPI research. Minneapolis, MN: University of Minnesota Press.
- Cattell, R. B. (1966). The meaning and strategic use of factor analysis. In R. B. Cattell (Ed.), Handbook of multivariate experimental psychology. Chicago: Rand McNally.

- Chrisjohn, R. D., Jackson, D. N., & Lanigan, C. B. (1984, June). The stability of the factor structure of the Basic Personality Inventory. Paper presented at the 45th annual convention of Canada Psychological Association, Ottawa, Canada.
- Green, S. B., Lissitz, R. W., & Mulaik, S. A. (1977). Limitations of coefficient alpha as an index of test unidimensionality. Educational and Psychological Measurement, *37*, 827-838.
- Fisher, R. A. (1921). On the probable error of a coefficient of correlation deduced from a small sample. Metron, *1*, 3-32.
- Hathaway, S. R., & McKinley, J. C. (1943). Minnesota Multiphasic Personality Inventory. New York: Psychological Corp.
- Hattie, J. (1985). Methodology review: Assessing unidimensionality of tests and items. Applied Psychological Measurement, *9*, 139-164.
- Helmes, E., & Barilko, O. (1988). Comparison of three multiscale inventories in identifying the presence of psychopathological symptoms. Journal of Personality Assessment, *52*, 74-80.
- Helmes, E., & Holden, R. R. (1986). Response styles and faking on the Basic Personality Inventory. Journal of Consulting and Clinical Psychology, *54*, 853-859.
- Hoffmann, H., Jackson, D. N., & Skinner, H. A. (1975). Dimensions of psychopathology among alcoholic patients. Journal of Studies on Alcohol, *36*, 825-837.
- Holden, R. R., Fekken, G. C., Reddon, J. R., Helmes, E., & Jackson, D. N. (1988). Clinical reliabilities and validities of the Basic Personality Inventory. Journal of Consulting and Clinical Psychology, *56*, 766-768.
- Holden, R. R., Helmes, E., Fekken, G. C., & Jackson, D. N. (1985). The multidimensionality of person reliability: Implications for interpreting individual test item responses. Educational and Psychological Measurement, *45*, 119-130.
- Holden, R. R., & Jackson, D. N. (1985). Disguise and the structured self-report assessment of psychopathology: I. An analogue investigation. Journal of Consulting and Clinical Psychology, *53*, 211-222.

- Holden, R. R., Reddon, J. R., Jackson, D. N., & Helmes, E. (1983). The construct heuristic applied to the measurement of psychopathology. Multivariate Behavioral Research, 18, 37-46.
- Jackson, D. N. (1970). A sequential system for personality scale development. In C. D. Spielberger (Ed.), Current topics in clinical and community psychology. Vol. 2. New York: Academic Press.
- Jackson, D. N. (1971). The dynamics of structured personality tests: 1971. Psychological Review, 78, 229-248.
- Jackson, D. N. (1975). Multimethod factor analysis: A reformulation. Multivariate Behavioral Research, 10, 259-275.
- Jackson, D. N. (1989). Basic Personality Inventory manual. Port Huron, MI: Sigma Assessment Systems.
- Jackson, D. N., & Hoffmann, H. (1987). Common dimensions of psychopathology from the MMPI and the Basic Personality Inventory. Journal of Clinical Psychology, 43, 661-669.
- Jackson, D. N., & Messick, S. (1986). The Differential Personality Inventory. London, Canada: Author.
- Jackson, D. N., & Reddon, J. R. (1987). Construct interpretation of MMPI clinical scales: An orthogonal transformation. Journal of Psychopathology and Behavioral Assessment, 9, 149-160.
- Jaffe, P. G., Leschied, A. W., Sas, L., Austin, G. W., & Smiley, C. (1985). The utility of the Basic Personality Inventory in the assessment of young offenders. The Ontario Psychologist, 17 (1), 4-11.
- Meehl, P. E. (1945). The dynamics of "structured" personality tests. Journal of Clinical Psychology, 1, 296-303.
- Millon, T. (1983). Millon Clinical Multiaxial Inventory manual (3rd ed.). Minneapolis, MN: National Computer Systems.
- Reddon, J. R. (1980). Rural-urban personality and adjustment among Alberta high school youth. Unpublished master's thesis, The University of Alberta, Edmonton, Canada.

- Reddon, J. R., Holden, R. R., & Jackson, D. N. (1983). Desirability and frequency of endorsement scale values and endorsement proportions for items of the Basic Personality Inventory. Psychological Reports, 52, 619-633.
- Reddon, J. R., & Jackson, D. N. (1989). Readability of three adult personality tests: Basic Personality Inventory, Jackson Personality Inventory, and Personality Research Form-E. Journal of Personality Assessment, 53, 180-183.
- Sas, L., Jaffe, P., & Reddon, J. R. (1985). Unravelling the needs of dangerous young offenders: A clinical-rational and empirical approach to classification. Canadian Journal of Criminology, 27, 83-96.
- Schönemann, P. H. (1966). A generalized solution of the orthogonal procrustes problem. Psychometrika, 31, 1-10.
- Smiley, W. C. (1977). Multivariate classification of male and female delinquent personality types. Unpublished doctoral dissertation, University of Western Ontario, London, Canada.
- Wiggins, J. S. (1973). Personality and prediction: Principles of personality assessment. Reading, MA: Addison-Wesley.

APPENDIX A

Breakdown of subjects age in the total Icelandic sample
(N=609).

and the Icelandic test-retest sample (N=59)

Age	<u>N=609</u>	<u>N=59</u>
13*	21	---
14	76	---
15	127	2
16	121	12
17	113	9
18	93	12
19	58	23
20	---	1

*18 of the 13 years old would have turned 14 within two months of the time the study was executed.

APPENDIX B



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220 HAFNARFJÖRÐUR

Dagsetning - Date
23. ágúst 1991

Tilvísun - Ref.
FÓ/-
91/071

Heimild skv. 3. mgr. 4.gr. laga nr. 121/1989 laga til skráningar upplýsinga skv. c, d og e- liðum 1. mgr. 4. gr. sömu laga og til flutnings gagna úr landi skv. 27. gr. sömu laga.

Tölvunefnd vísar til erindis yðar, dags. 9. þ.m., þar sem þér óskið eftir heimild nefndarinnar til þess að þér megið, framkvæma rannsókn á gildi íslenskrar þýðingar á persónuleikalistann "Basic Personality Inventory (HPI)". Rannsókn þessari er ætlað að vera liður í ritgerð yðar til master gráðu í klínískri sálarfræði við Lakehead University, Thunder Bay, Ontario, Canada, undir leiðsögn Dr. Anthony Thompson.

Rannsókn þessa hyggist þér gera meðal 500 unglunga á aldrinum 14 - 18 ára í Reykjavík og nágrenni og jafnframt meðal 30 ungmenna á aldrinum 16 - 30 ára, sem tala bæði íslensku og ensku. Þátttakendur munu verða beðnir um að svara spurningalista þeim, sem fylgdi erindi yðar, en hann samanstendur af 240 spurningum. Á spurningalistana mun verða skráð aldur þátttakenda, kyn og já/nei svör við spurningunum. Jafnframt munu spurningalistarnir verða númeraðir í þeim tilgangi að hægt verði að ná til þátttakenda, sem hugsanlega myndu svara játandi spurningum þess efnis, að þeir hafi í hyggju að skaða sjálfan sig eða aðra. Hins vegar mun aðeins verða greint frá niðurstöðum hóps en ekki einstaklinga.

Með erindi yðar fylgdu eintök af samþykkisyfirlýsingum þeim, sem þátttakendur í rannsókninni munu undirrita, svo og foreldrar/forráðamenn þeirra þátttakenda sem eru á aldrinum 14 - 16 ára. Þá liggur og fyrir samþykki menntamálaráðuneytis fyrir rannsókn þessari.

Tölvunefnd ræddi erindi yðar á fundi sínum 22. þ.m. Upplýsingar þær, sem þér hyggist skrá, eru m.a. upplýsingar sem falla undir c, d og e- liði 1.mgr. 4.gr. laga nr. 121/1989 um skráningu og meðferð persónuupplýsinga. Með vísan til 3.mgr. 4.gr. laganna fellst Tölvunefnd á að veita yður heimild til að framkvæma umbeðna rannsókn.

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Research Psychologists Press, Inc., on this date Sept. 10, 1991 hereby authorizes:

NAME: Throstur Bjorgvinsson, Advisor: Dr. Anthony Thompson

TITLE: Masters Student

INSTITUTION: Lakehead University

DEPARTMENT: Psychology

ADDRESS: Thunder Bay, Ontario, P7B 5E1

(Licensee) to copy or reproduce the material identified below as The Work, subject to all of the terms, conditions, and limitations of this license.

A. The Work: The Work Means:

NAME: Basic Personality Inventory (BPI)

AUTHOR(S): Douglas N. Jackson, Ph.D.

SPECIFIC FORM OF THE TEST OR THE WORK:

PARTICULAR SCALES OR PARTICULAR WORK USED:

Reproduction of entire instrument in Icelandic (test booklet and answer sheet).

B. Authorized Use: The license granted hereby is specifically limited to the following uses, and no other:

The study is intended to investigate the psychometric properties of the Basic Personality Inventory (BPI) when applied in another culture, Iceland.

APPENDIX C



**The psychometric properties an Icelandic translation
of the Basic Personality Inventory***

Request for permission to take part in a study using a personality inventory

Dear Participant ;

Questionnaires and inventories are used by psychologists to understand and measure many aspects of human behaviour. One such questionnaire, the Basic Personality Inventory, which was developed in Canada, attempts to measure personality characters such as anxiety, carefulness, introversion, cheerfulness, and social and personal problems.

There are many steps involved in developing a good personality questionnaire. You are asked to complete an Icelandic translation of the Basic Personality Inventory to determine whether the characteristics of this instrument with Icelandic youth are sound enough to be used beyond research purposes (e.g. in clinical work with adolescents). This study is a part of my graduate study at Lakehead University, Thunder Bay, Ontario, Canada, under the supervision of Dr. Anthony Thompson.

There are 240 questions, that ask you about your thoughts, feelings and behaviours. You are asked to answer true or false. There are no right or wrong answers. It takes 30 to 45 minutes to complete the inventory. Your participation is voluntary and you can withdraw from the study at any time. There is no penalty for declining to participate. Your answers will not be released to anyone, although there are limits to confidentiality when a person indicates an intention to harm himself or others. The information needed is your age, sex and your answer to the 240 questions. Your answer will be identified by a number rather than your name. The results will be reported in terms of groups of teens only. The intention is to get approximately 500 teens, ranging in age from 14 to 18 years old in schools in and around Reykjavík, to complete the inventory.

As a result of participating in the study you will understand the kind of question which makes up a personality inventory like this one. You will also receive a one page of explanation about personality inventories and how psychologists use them.

It will be unlikely that you will find the questions difficult or upsetting in any way. However, if for any reason you have further questions or concerns, please contact me and/or the counsellor at your school, _____**.

If you agree to participate in this study, please fill out attached. If you have any questions concerning the study, feel free to contact me at 52839.

Cordially,

Thröstur Björgvinsson

* This was translated into Icelandic.

** The name of school counsellor or school psychologist at each school was written on this line.

Consent form for participants*

My signature on this sheet indicates that I agree to participate in a study by Thröstur Björgvinsson and Dr. Anthony Thompson on the psychometric properties of the Basic Personality Inventory. It also indicates that I understand the following;

1. I am a volunteer and can withdraw at any time from the study.
2. The data that I provide will be confidential.
3. I will also receive a one page of explanation about personality inventories and how psychologists use them, following the completion of the project.

I have received explanations about the nature of the study, its purpose, and procedure.

Signature of Participant

Date

* This was translated into Icelandic.

APPENDIX D

Endorsement proportion of items in keyed direction

Item	Scale	Key	Endorsement Proportion		Item	Scale	Key	Endorsement Proportion	
			Males	Females				Males	Females
1	Hyp	F	0.18	0.26	61	Hyp	T	0.05	0.10
2	Dep	T	0.03	0.08	62	Dep	F	0.48	0.40
3	Den	F	0.18	0.17	63	Den	T	0.47	0.13
4	IPs	T	0.53	0.51	64	IPs	F	0.65	0.77
5	Aln	T	0.25	0.16	65	Aln	F	0.27	0.25
6	PId	F	0.28	0.33	66	PId	T	0.06	0.08
7	Axy	T	0.01	0.16	67	Axy	F	0.44	0.47
8	ThD	F	0.29	0.29	68	ThD	T	0.04	0.07
9	ImE	T	0.64	0.74	69	ImE	F	0.51	0.46
10	SoI	F	0.06	0.04	70	SoI	T	0.11	0.11
11	SDp	T	0.03	0.08	71	SDp	F	0.23	0.23
12	Dev	T	0.56	0.75	72	Dev	T	0.24	0.37
13	Hyp	T	0.12	0.24	73	Hyp	F	0.73	0.80
14	Dep	F	0.62	0.68	74	Dep	T	0.29	0.34
15	Den	T	0.06	0.08	75	Den	F	0.34	0.29
16	IPs	F	0.25	0.17	76	IPs	T	0.47	0.38
17	Aln	F	0.47	0.48	77	Aln	T	0.44	0.16
18	PId	T	0.08	0.12	78	PId	F	0.23	0.31
19	Axy	F	0.42	0.57	79	Axy	T	0.24	0.37
20	ThD	T	0.03	0.04	80	ThD	F	0.20	0.31
21	ImE	F	0.51	0.47	81	ImE	T	0.25	0.20
22	SoI	T	0.16	0.16	82	SoI	F	0.12	0.08
23	SDp	F	0.14	0.15	83	SDp	T	0.03	0.06
24	Dev	T	0.42	0.47	84	Dev	T	0.33	0.52
25	Hyp	F	0.50	0.64	85	Hyp	T	0.33	0.58
26	Dep	T	0.05	0.06	86	Dep	F	0.20	0.25
27	Den	F	0.12	0.04	87	Den	T	0.30	0.36
28	IPs	T	0.31	0.30	88	IPs	F	0.54	0.56
29	Aln	T	0.19	0.06	89	Aln	F	0.49	0.42
30	PId	F	0.15	0.28	90	PId	T	0.65	0.77
31	Axy	T	0.25	0.26	91	Axy	F	0.29	0.44
32	ThD	F	0.17	0.19	92	ThD	T	0.17	0.24
33	ImE	T	0.53	0.40	93	ImE	F	0.32	0.42
34	SoI	F	0.50	0.41	94	SoI	T	0.06	0.03
35	SDp	T	0.03	0.09	95	SDp	F	0.17	0.16
36	Dev	T	0.07	0.11	96	Dev	T	0.03	0.02
37	Hyp	T	0.21	0.35	97	Hyp	F	0.36	0.39
38	Dep	F	0.09	0.12	98	Dep	T	0.03	0.07
39	Den	T	0.36	0.38	99	Den	F	0.14	0.12
40	IPs	F	0.30	0.30	100	IPs	T	0.72	0.72
41	Aln	F	0.47	0.29	101	Aln	T	0.27	0.21
42	PId	T	0.51	0.47	102	PId	F	0.48	0.39
43	Axy	F	0.41	0.56	103	Axy	T	0.06	0.11
44	ThD	T	0.18	0.19	104	ThD	F	0.19	0.25
45	ImE	F	0.57	0.61	105	ImE	T	0.50	0.45
46	SoI	T	0.21	0.19	106	SoI	F	0.90	0.76
47	SDp	F	0.14	0.08	107	SDp	T	0.07	0.12
48	Dev	T	0.04	0.06	108	Dev	T	0.13	0.31
49	Hyp	F	0.32	0.39	109	Hyp	T	0.18	0.27
50	Dep	T	0.05	0.06	110	Dep	F	0.51	0.48
51	Den	F	0.48	0.39	111	Den	T	0.13	0.08
52	IPs	T	0.63	0.62	112	IPs	F	0.26	0.19
53	Aln	T	0.56	0.26	113	Aln	F	0.41	0.18
54	PId	F	0.15	0.18	114	PId	T	0.43	0.60
55	Axy	T	0.23	0.42	115	Axy	F	0.24	0.25
56	ThD	F	0.17	0.25	116	ThD	T	0.25	0.36
57	ImE	T	0.56	0.65	117	ImE	F	0.42	0.50
58	SoI	F	0.31	0.31	118	SoI	T	0.24	0.24
59	SDp	T	0.04	0.12	119	SDp	F	0.37	0.38
60	Dev	T	0.02	0.02	120	Dev	T	0.05	0.04

Note. Scale abbreviations: Hyp=Hypochondriasis; Dep=Depression; Den=Denial; IPs=Interpersonal Problems; Aln=Alienation; PId=Persecutory Ideas; Axy=Anxiety; ThD=Thinking Disorder; ImE=Impulse Expression; SoI=Social Introversion; SDp= Self Depreciation; Dev=Deviation.

Endorsement proportion of items in keyed direction

Item	Scale	Key	Endorsement Proportion		Item	Scale	Key	Endorsement Proportion	
			Males	Females				Males	Females
121	Hyp	F	0.21	0.31	181	Hyp	T	0.04	0.10
122	Dep	T	0.07	0.24	182	Dep	F	0.19	0.29
123	Den	F	0.13	0.04	183	Den	T	0.37	0.42
124	IPs	T	0.73	0.78	184	IPs	F	0.35	0.28
125	Aln	T	0.37	0.20	185	Aln	F	0.19	0.08
126	PId	F	0.25	0.29	186	PId	T	0.06	0.03
127	Axy	T	0.45	0.64	187	Axy	F	0.58	0.57
128	ThD	F	0.10	0.14	188	ThD	T	0.12	0.15
129	ImE	T	0.25	0.40	189	ImE	F	0.61	0.52
130	SoI	F	0.53	0.39	190	SoI	T	0.15	0.07
131	SDp	T	0.15	0.21	191	SDp	F	0.18	0.36
132	Dev	T	0.33	0.30	192	Dev	T	0.08	0.04
133	Hyp	T	0.32	0.46	193	Hyp	F	0.17	0.28
134	Dep	F	0.60	0.60	194	Dep	T	0.13	0.10
135	Den	T	0.02	0.03	195	Den	F	0.36	0.14
136	IPs	F	0.36	0.39	196	IPs	T	0.75	0.86
137	Aln	F	0.16	0.08	197	Aln	T	0.18	0.11
138	PId	T	0.60	0.67	198	PId	F	0.48	0.33
139	Axy	F	0.57	0.72	199	Axy	T	0.10	0.20
140	ThD	T	0.14	0.29	200	ThD	F	0.28	0.28
141	ImE	F	0.26	0.29	201	ImE	T	0.41	0.48
142	SoI	T	0.25	0.14	202	SoI	F	0.38	0.34
143	SDp	F	0.25	0.26	203	SDp	T	0.09	0.13
144	Dev	T	0.05	0.03	204	Dev	T	0.40	0.52
145	Hyp	F	0.12	0.32	205	Hyp	T	0.31	0.52
146	Dep	T	0.07	0.08	206	Dep	F	0.16	0.21
147	Den	F	0.76	0.82	207	Den	T	0.35	0.38
148	IPs	T	0.83	0.85	208	IPs	F	0.33	0.44
149	Aln	T	0.25	0.31	209	Aln	F	0.52	0.38
150	PId	F	0.71	0.75	210	PId	T	0.21	0.15
151	Axy	T	0.42	0.60	211	Axy	F	0.50	0.61
152	ThD	F	0.14	0.18	212	ThD	T	0.08	0.08
153	ImE	T	0.48	0.53	213	ImE	F	0.54	0.65
154	SoI	F	0.41	0.23	214	SoI	T	0.52	0.53
155	SDp	T	0.16	0.18	215	SDp	F	0.27	0.29
156	Dev	T	0.06	0.02	216	Dev	T	0.03	0.05
157	Hyp	T	0.40	0.60	217	Hyp	F	0.22	0.41
158	Dep	F	0.05	0.06	218	Dep	T	0.18	0.27
159	Den	T	0.44	0.42	219	Den	F	0.15	0.13
160	IPs	F	0.17	0.11	220	IPs	T	0.50	0.52
161	Aln	F	0.06	0.08	221	Aln	T	0.23	0.14
162	PId	T	0.30	0.29	222	PId	F	0.05	0.08
163	Axy	F	0.45	0.62	223	Axy	T	0.06	0.07
164	ThD	T	0.21	0.28	224	ThD	F	0.06	0.05
165	ImE	F	0.64	0.58	225	ImE	T	0.76	0.56
166	SoI	T	0.29	0.21	226	SoI	F	0.03	0.01
167	SDp	F	0.46	0.55	227	SDp	T	0.33	0.41
168	Dev	T	0.03	0.04	228	Dev	T	0.05	0.01
169	Hyp	F	0.25	0.27	229	Hyp	T	0.11	0.29
170	Dep	T	0.06	0.11	230	Dep	F	0.21	0.22
171	Den	F	0.40	0.35	231	Den	T	0.49	0.45
172	IPs	T	0.34	0.22	232	IPs	F	0.55	0.60
173	Aln	T	0.70	0.69	233	Aln	F	0.35	0.25
174	PId	F	0.13	0.14	234	PId	T	0.20	0.18
175	Axy	T	0.40	0.52	235	Axy	F	0.07	0.13
176	ThD	F	0.09	0.25	236	ThD	T	0.03	0.03
177	ImE	T	0.72	0.77	237	ImE	F	0.37	0.34
178	SoI	F	0.08	0.08	238	SoI	T	0.44	0.32
179	SDp	T	0.30	0.27	239	SDp	F	0.20	0.27
180	Dev	T	0.05	0.09	240	Dev	T	0.03	0.07

Note. Scale abbreviations: Hyp=Hypochondriasis; Dep=Depression; Den=Denial; IPs=Interpersonal Problems;

Aln=Alienation; PId=Persecutory Ideas; Axy=Anxiety; ThD=Thinking Disorder; ImE=Impulse Expression; SoI=Social Introversion; SDp= Self Depreciation; Dev=Deviation.

APPENDIX E

Hypochondrias

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q1	6.2612	3.3853	.3487	.7655
Q25	5.9041	2.6431	.4898	.7547
Q49	6.1174	2.6402	.5086	.7535
Q73	5.7124	3.6953	.2352	.7727
Q121	6.2165	3.1732	.3889	.7627
Q145	6.2463	3.4012	.3327	.7665
Q169	6.2198	3.4301	.3074	.7682
Q193	6.2496	3.5386	.2889	.7693
Q217	6.1521	3.0298	.4013	.7616
Q13	6.2893	3.6529	.2770	.7699
Q37	6.1950	3.3990	.3050	.7684
Q61	6.4017	4.1546	.1907	.7739
Q85	6.0050	3.5977	.2072	.7762
Q97	6.1008	3.5676	.2259	.7745
Q109	6.2529	3.1628	.4187	.7610
Q133	6.0826	2.9634	.3993	.7617
Q157	5.9686	3.1993	.3194	.7678
Q181	6.4050	4.0228	.2640	.7710
Q205	6.0562	3.0134	.3793	.7632
Q229	6.2711	3.1747	.4308	.7604

Depression

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q2	4.3144	12.6715	.3534	.8297
Q26	4.3177	12.7733	.3003	.8312
Q50	4.3110	12.4760	.4625	.8264
Q74	4.0535	11.5281	.4918	.8223
Q98	4.3194	12.5092	.4800	.8263
Q122	4.2090	12.1455	.3976	.8271
Q146	4.2926	12.6496	.3047	.8308
Q170	4.2826	12.0624	.5905	.8206
Q194	4.2592	12.8021	.1775	.8358
Q218	4.1421	12.0149	.3809	.8282
Q14	3.7207	12.1949	.2624	.8361
Q38	4.2659	12.0883	.5266	.8223
Q62	3.9398	11.6212	.4239	.8268
Q86	4.1505	11.2972	.6577	.8133
Q110	3.8796	11.7342	.3834	.8294
Q134	3.7759	11.9933	.3125	.8336
Q158	4.3127	12.6474	.3625	.8294
Q182	4.1321	11.3443	.6180	.8152
Q206	4.1856	11.3407	.6921	.8123
Q230	4.1572	12.2466	.3088	.8318

Denial

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q3	5.4505	6.5951	.1955	.5403
Q27	5.5512	6.9189	.0965	.5529
Q51	5.2013	6.0652	.3346	.5124
Q75	5.3201	6.6081	.1282	.5520
Q99	5.5017	6.7033	.1808	.5430
Q123	5.5479	6.8299	.1557	.5468
Q147	4.8366	6.5402	.2028	.5389
Q171	5.2591	6.5394	.1431	.5499
Q195	5.3944	6.2954	.3061	.5213
Q219	5.4917	6.6107	.2245	.5370
Q15	5.5578	7.1396	-.0577	.5676
Q39	5.2673	6.5235	.1514	.5483
Q63	5.3498	6.4427	.2117	.5370
Q87	5.3003	6.4088	.2087	.5375
Q111	5.5231	6.5970	.2752	.5321
Q135	5.6023	7.0697	.0363	.5568
Q159	5.1997	7.2179	-.1266	.5992
Q183	5.2294	6.2101	.2767	.5242
Q207	5.2640	6.1451	.3137	.5172
Q231	5.0974	6.1806	.2804	.5232

Interpersonal Problems

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q4	9.0473	9.5071	.3352	.6262
Q28	9.2686	10.3051	.0937	.6553
Q52	8.9493	10.2715	.0907	.6567
Q76	9.1486	9.7850	.2466	.6377
Q100	8.8547	9.7995	.2773	.6341
Q124	8.8108	10.0521	.2035	.6426
Q148	8.7264	10.4157	.1022	.6518
Q172	9.2956	9.6299	.3482	.6260
Q196	8.7551	9.9078	.2970	.6332
Q220	9.0541	9.6214	.2961	.6313
Q16	9.3598	9.9126	.2789	.6347
Q40	9.2703	10.3397	.0822	.6566
Q64	8.8480	9.9565	.2228	.6405
Q88	9.0135	9.7799	.2453	.6379
Q112	9.3497	9.8555	.2947	.6329
Q136	9.1909	10.0193	.1746	.6466
Q160	9.4257	10.1129	.2502	.6385
Q184	9.2517	9.7420	.2866	.6329
Q208	9.1706	9.6409	.2993	.6310
Q232	8.9932	9.6954	.2760	.6339

Alienation

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q5	5.4677	10.7278	.1864	.7147
Q29	5.5456	10.5938	.3176	.7052
Q53	5.2769	9.6225	.5002	.6842
Q77	5.3831	10.0241	.4018	.6954
Q101	5.4345	10.6714	.1903	.7148
Q125	5.3964	10.0470	.4013	.6956
Q149	5.3831	10.4261	.2560	.7093
Q173	4.9701	10.4675	.2338	.7115
Q197	5.5274	10.5387	.3185	.7047
Q221	5.4892	10.7320	.1985	.7136
Q17	5.1924	10.0227	.3486	.7003
Q41	5.2985	9.9573	.3890	.6962
Q65	5.4046	10.9091	.0938	.7237
Q89	5.2189	10.1812	.2980	.7056
Q113	5.3831	10.2002	.3372	.7017
Q137	5.5539	10.8654	.1963	.7133
Q161	5.5970	11.0450	.1568	.7155
Q185	5.5390	10.7439	.2374	.7105
Q209	5.2305	10.2441	.2785	.7076
Q233	5.3748	10.3610	.2757	.7075

Persecutory Ideas

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q6	5.9292	8.9669	.4074	.6771
Q30	6.0099	9.1286	.3972	.6794
Q54	6.0626	9.8443	.1338	.7033
Q78	5.9572	9.2193	.3249	.6861
Q102	5.8072	9.4001	.2162	.6983
Q126	5.9588	9.3828	.2631	.6925
Q150	5.4992	9.4715	.2324	.6955
Q174	6.0956	9.8984	.1313	.7028
Q198	5.8369	9.9651	.0311	.7180
Q222	6.1647	9.8144	.2689	.6938
Q18	6.1318	9.7615	.2386	.6948
Q42	5.7446	9.2895	.2496	.6947
Q66	6.1614	9.8518	.2376	.6955
Q90	5.5206	9.1609	.3405	.6844
Q114	5.7068	8.6432	.4791	.6676
Q138	5.5980	9.1979	.2977	.6890
Q162	5.9357	8.9579	.4144	.6764
Q186	6.1911	10.2208	.0317	.7058
Q210	6.0560	9.4457	.3027	.6889
Q234	6.0461	9.2190	.3931	.6806

Anxiety

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q7	7.2599	12.7267	.2990	.7337
Q31	7.0977	12.4299	.2646	.7350
Q55	7.0199	12.0361	.3594	.7273
Q79	7.0381	12.2622	.2938	.7328
Q103	7.2649	12.8219	.2606	.7358
Q127	6.8046	12.4128	.2211	.7394
Q151	6.8328	11.6751	.4424	.7196
Q175	6.8874	11.6623	.4471	.7192
Q199	7.2003	12.5518	.2946	.7330
Q223	7.2914	13.0028	.2137	.7384
Q19	6.8510	12.1038	.3108	.7316
Q43	6.8609	12.0536	.3260	.7302
Q67	6.8940	11.9357	.3632	.7268
Q91	6.9785	12.1305	.3172	.7309
Q115	7.1060	12.5161	.2397	.7369
Q139	6.7053	11.9727	.3738	.7260
Q163	6.8079	11.8072	.4033	.7232
Q187	6.7848	12.5174	.1921	.7418
Q211	6.7930	12.4629	.2073	.7406
Q235	7.2533	12.7400	.2812	.7345

Thinking Disorder

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q8	3.1766	7.4845	.2479	.7003
Q32	3.2789	7.7188	.2007	.7037
Q56	3.2508	7.3056	.3742	.6862
Q80	3.2046	7.2738	.3538	.6881
Q104	3.2442	7.5336	.2628	.6979
Q128	3.3416	7.8121	.2088	.7021
Q152	3.3036	7.5705	.2955	.6946
Q176	3.2904	7.8924	.1257	.7105
Q200	3.1898	7.4102	.2856	.6959
Q224	3.4092	8.0471	.1571	.7051
Q20	3.4290	7.9908	.2641	.7002
Q44	3.2855	7.5696	.2780	.6962
Q68	3.4059	7.7854	.3515	.6937
Q92	3.2574	7.2659	.3994	.6837
Q116	3.1518	7.3058	.3123	.6930
Q140	3.2426	7.4601	.2954	.6945
Q164	3.2211	7.2337	.3834	.6849
Q188	3.3317	7.6270	.2990	.6945
Q212	3.3861	7.9135	.2097	.7018
Q236	3.4406	8.0221	.2942	.7002

Impulse Expression

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q9	9.2334	15.9504	.4579	.7626
Q33	9.4735	15.5366	.5249	.7572
Q57	9.3195	15.8596	.4498	.7627
Q81	9.7086	16.8403	.2453	.7755
Q105	9.4553	15.3960	.5614	.7546
Q129	9.5977	16.5029	.2934	.7730
Q153	9.4205	16.2839	.3252	.7711
Q177	9.1821	16.1558	.4293	.7648
Q201	9.4752	16.6180	.2415	.7766
Q225	9.2798	16.8718	.1904	.7796
Q21	9.4387	16.2400	.3365	.7703
Q45	9.3444	16.8630	.1829	.7804
Q69	9.4487	15.7204	.4734	.7608
Q93	9.5513	16.7984	.2046	.7788
Q117	9.4669	16.6573	.2311	.7773
Q141	9.6573	16.9520	.1902	.7790
Q165	9.3212	16.6927	.2293	.7773
Q189	9.3709	15.7495	.4691	.7612
Q213	9.3262	16.2666	.3394	.7701
Q237	9.5762	15.9361	.4407	.7634

Social Introversion

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q10	5.0796	9.1033	.3152	.7060
Q34	4.6833	8.5125	.2823	.7063
Q58	4.8226	8.6844	.2498	.7091
Q82	5.0365	9.1448	.1952	.7119
Q106	4.3101	9.4535	-.0082	.7297
Q130	4.6799	8.1981	.3976	.6929
Q154	4.8226	8.6711	.2549	.7086
Q178	5.0514	9.0787	.2590	.7079
Q202	4.7761	8.0976	.4592	.6860
Q226	5.1095	9.3833	.1888	.7133
Q22	4.9735	8.7202	.3357	.7008
Q46	4.9370	8.4910	.4026	.6942
Q70	5.0216	8.7620	.3864	.6983
Q94	5.0896	9.1946	.2794	.7085
Q118	4.8972	8.5874	.3265	.7010
Q142	4.9486	9.3744	.0234	.7274
Q166	4.8856	8.3374	.4239	.6911
Q190	5.0249	9.0409	.2374	.7090
Q214	4.6103	8.6469	.2325	.7119
Q238	4.7612	8.0293	.4806	.6834

Self Depreciation

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q11	3.9470	10.9636	.3392	.7786
Q35	3.9435	10.8428	.4066	.7758
Q59	3.9134	10.6739	.4167	.7739
Q83	3.9576	10.9964	.3569	.7785
Q107	3.9028	10.5658	.4493	.7719
Q131	3.8251	10.7145	.2690	.7814
Q155	3.8339	10.4644	.3830	.7742
Q179	3.7208	10.6405	.2356	.7851
Q203	3.8958	10.5006	.4670	.7707
Q227	3.6272	10.4608	.2679	.7836
Q23	3.8675	11.2196	.0865	.7910
Q47	3.8940	10.9091	.2564	.7815
Q71	3.7792	10.1618	.4508	.7693
Q95	3.8339	10.5458	.3482	.7764
Q119	3.6431	9.8087	.4972	.7651
Q143	3.7491	10.0396	.4730	.7675
Q167	3.5053	10.3389	.2942	.7820
Q191	3.7332	10.5393	.2770	.7819
Q215	3.7244	10.2389	.3814	.7743
Q239	3.7703	9.9578	.5239	.7640

Deviation

QUESTIONS	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q12	2.7937	4.6235	.3492	.6199
Q36	3.3663	5.1747	.2216	.6383
Q60	3.4389	5.4037	.1927	.6435
Q84	3.0231	4.5284	.3690	.6164
Q108	3.2277	4.9034	.2522	.6354
Q132	3.1485	4.8572	.2361	.6392
Q156	3.4257	5.3556	.1953	.6422
Q180	3.3861	5.4374	.0395	.6553
Q204	2.9917	4.6561	.3011	.6291
Q228	3.4323	5.4723	.0712	.6498
Q24	3.0182	4.6294	.3170	.6261
Q48	3.4092	5.2207	.2832	.6346
Q72	3.1452	4.6533	.3416	.6213
Q96	3.4389	5.4698	.0940	.6484
Q120	3.4158	5.2218	.3075	.6335
Q144	3.4241	5.3719	.1702	.6438
Q168	3.4274	5.3427	.2178	.6409
Q192	3.4043	5.3288	.1625	.6440
Q216	3.4208	5.2623	.2839	.6358
Q240	3.4092	5.2008	.3034	.6330
