CROSS-CULTURAL ANXIETY

Volume 2

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The Development and Validation of the Hungarian Form of the State-Trait Anxiety Inventory

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The development and validation of the Hungarian Form of the STAI started in collaboration with Hanin in Leningrad in 1974 after the successful application of the Russian Form of the STAI in a series of studies of alpha-feedback training with various forms of neurosis. In parallel studies with two groups of neurotic patients on alpha-feedback training therapy in Budapest and Leningrad, the Hungarian STAI was used to measure the effectiveness of the treatment in both groups. The Hungarian STAI (STAI-H) has also been used with populations of healthy subjects and with patients with vegetative disturbances, deviant behavior, and addiction to glue sniffing.

Validational work with the Hungarian STAI was aimed at making it equivalent not only with the original English Form, but also with the Russian Form. The preliminary Hungarian translations of the English and Russian STAIs were made by Szentmihalyi Szabo, a lecturer of the Eotvos Lorand University of Arts and Natural Sciences (ELTE University) in Budapest, and by Professor Fabricius-Kovacs (1918-1977), founder of the Department of Russian Philology at the Kossuth Lajos University in Debrecen.[1]

From the item statements rendered by the translators, the final set of items for the Hungarian Form of the STAI was selected by Hungarian psychologists with a good command of English and Russian, who were also experienced in psycholinguistics. On the basis of a pilot study, the Hungarian STAI items were further revised with the assistance of E. Banyai and A. Jarovinszki, staff members of the Psychological Institute of the Hungarian Academy of Sciences.

The examination of the equivalence of the Hungarian STAI with both the Russian and English Forms was carried out with four groups of bilingual university students in Budapest and Leningrad, as follows:

1. *Group I:* The English and Hungarian Forms of the STAI were administered with the standard instructions in a single session to 20 male African students at the Semmelweis Medical University in Budapest, whose mother language was Asandi,

[1] Professor Fabricius-Kovacs has translated and edited works by Edward Sapir and Mario Pei. Both he and Szabo excel as translators of English literature.

Yoruba, Ibo or Swahili. These students had graduated from English high schools in Ghana, Nigeria, Kenya, Mauritius, and Tanzania, and spoke English as a second language. The Hungarian Form was given first, followed by the English Form.

2. *Group II:* The equivalence of the Hungarian and English Forms of the STAI was further evaluated with a group of native Hungarian students of English philology at the ELTE University in Budapest. This group consisted of 24 students (10 males, 14 females) who were given the questionnaires during English seminars. For this group, the English Form was given first, followed by the Hungarian Form. Although the subjects remained anonymous, they believed that their English was being examined in a masked way.

3. *Group III:* In evaluating the equivalence of the Russian and Hungarian forms of the STAI, data were collected from 25 male Hungarian medical students whose second language was Russian. These students were tested during their final term at the Leningrad Medical University. The Russian Form was given first, followed by the Hungarian Form of the STAI. The tests were given under relaxed testing conditions by a Russian psychologist (Hanin). This relaxed manner of testing had also characterized the test administration for the African students in Group I.

4. *Group IV:* This group consisted of 26 Hungarian students (10 males, 16 females) who were studying Russian philology at the ELTE University in Budapest. These students responded first to the Hungarian Form of the STAI and then to the Russian Form, during seminars in their final term at the University.

The ages for the 95 students in the four groups ranged from 22 to 27 years, and the mean age did not differ significantly from one group to another. Groups I and III were also similar in terms of the relaxed conditions of the testing, and in the fact that they were highly articulate in their second languages, i.e., Hungarian for the African students in Group I and Russian for the Hungarian students in Group III. Group II (English-Hungarian) and Group IV (Hungarian-Russian) were only moderately articulate in their second language and members of these groups were also under greater pressure in terms of the challenge to their professional prestige. Since they were philology students and were tested in a quasi-exam situation, it was assumed that they worked at a higher level of emotional stress than the medical students who were learning their profession in their second language.

PSYCHOMETRIC PROPERTIES OF THE HUNGARIAN STAI

The means, standard deviations and alpha coefficients (Cronbach, 1951) for the Hungarian, English and Russian Forms of the STAI A-State scale are presented in Table 1 for the four groups. The A-State mean scores of the African students (Group I) were lower for both the English and Hungarian Forms of the STAI than the mean A-State scores reported for male university students in the United States (Spielberger, Gorsuch, & Lushene, 1970) and Brazil (Biaggio, Natalicio, & Spielberger, 1976). The African students also scored lower in A-State than the three groups of Hungarian students, and the difference between Group I and Group III for the Hungarian A-State scale was statistically significant ($p < .05$). The mean A-State scores for students of English and Russian philology (Groups II and IV) were much higher than those of the other two groups ($p < .01$) in both their first and second languages.

Table 1 Means, Standard Deviations, and Alpha Coefficients for the Hungarian, English, and Russian STAI A-State Scales

	English Form		Russian Form	
	Group I ($N = 20$)	Group II ($N = 24$)	Group III ($N = 25$)	Group IV ($N = 26$)
Mean	34.30	48.08	41.80	49.77
SD	6.21	10.37	9.40	8.70
Alpha	.78	.87	.86	.85
	Hungarian Form			
Mean	34.55	49.75	40.44	48.77
SD	6.19	9.95	10.80	10.12
Alpha	.81	.91	.93	.89

The means, standard deviations and alpha coefficients for the Hungarian, English and Russian Forms of the STAI A-Trait scale for the four groups are reported in Table 2. As was the case for the A-State scale, the African students (Group I) scored significantly lower than any of the three Hungarian groups. The Hungarian medical students (Group III) also scored lower than the Hungarian students of English and Russian philology (Groups II and IV).

The mean A-State scores for the Hungarian medical students in Leningrad (Group III) were similar to those reported by Hanin (1978) for Russian male physical education students, but the mean A-Trait scores for these students were higher in both languages than the A-Trait scores for the Russian group. However, the Hungarian male medical students (Group III) were similar in both trait and state anxiety to the average anxiety levels reported for Hungarian males (see normative data reported in Table 8).

INTERNAL CONSISTENCY OF THE HUNGARIAN STAI

The alpha coefficients of .89 and .85 or higher for the Hungarian STAI A-State and A-Trait scales for the three groups of Hungarian students indicated that the internal consistency for the Hungarian STAI was comparable to that reported for

Table 2 Means, Standard Deviations, and Alpha Coefficients for the Hungarian, English, and Russian STAI A-Trait Scales

	English Form		Russian Form	
	Group I ($N = 20$)	Group II ($N = 24$)	Group III ($N = 25$)	Group IV ($N = 26$)
Mean	36.80	48.00	43.24	45.58
SD	8.61	7.34	8.04	10.21
Alpha	.88	.78	.80	.89
	Hungarian Form			
Mean	37.20	47.08	41.55	46.19
SD	8.30	8.31	7.44	10.65
Alpha	.88	.85	.85	.90

American university students (Spielberger et al., 1970). For the Hungarian students, the A-State alphas were higher than their A-Trait alphas, and the native language alphas for these students were higher than their second language alphas. In contrast, the A-Trait alphas were higher than the A-State alphas for the African students, for whom there was little difference in the internal consistency of the English and Hungarian Forms.

The range of item-remainder correlations (IRC) for the English, Russian and Hungarian Forms of the STAI, and the median IRC of each scale for each group are reported in Table 3. Before describing these results, it must be noted that item 13 ("I am jittery") and item 35 ("I feel blue") of the English scales were widely misunderstood by the African students. On the basis of post-test discussions, it appeared that approximately 80% of the African students did not know the meaning of these statements. Therefore, in computing the IRCs for Group I, these two items were excluded.

Item-Remainder Correlations for the A-State Scales

In Group I, the lowest IRC for the English scale was .04 for item 14, "I feel high strung," and the highest IRCs (.69) were obtained for items 1 and 3, "I feel calm," "I am tense." It was surprising to find that the IRC for item 9, "I feel anxious," was next to the lowest (.17) for the English scale and also relatively low (.32) for the Hungarian scale for this group. For the Hungarian scale, the IRC values for Group I ranged from .11 for items 8 and 18 ("I feel rested," "I feel overexcited and rattled") to .84 for item 2 ("I feel secure").

In Group II, there was some misunderstanding of items in the English scales, but this appeared to be sporadic and negligible. The lowest IRC (.05) occurred for item 6, "I feel upset"; the highest IRC of .74 was found for item 5, "I feel at ease." The IRCs for item 9, "I feel anxious," were .50 and .66 for the English and Hungarian scales, and were thus higher than the median IRC for both forms. For Group II, item 13, "I am jittery," ranked lowest for the Hungarian Form (IRC = .07), whereas the highest IRC (.82) was found for item 5, "I feel at ease."

For Group III, the IRCs for items 4 and 17 ("I am regretful," "I am worried") in the Russian Form were both below .20. Hanin (1978) has also reported a low IRC

Table 3 Median and Range of Item-remainder Correlations for the English, Russian, and Hungarian STAI A-State and A-Trait Scales

		A-State Scale		A-Trait Scale	
Groups	Language	Median IRCs	Range of IRCs	Median IRCs	Range of IRCs
I	English	.47	.04–.69	.54	.17–.82
I	Hungarian	.64	.11–.84	.54	.25–.82
II	English	.50	.05–.74	.39	.12–.66
II	Hungarian	.60	.07–.82	.48	.19–.74
III	Russian	.50	.15–.66	.37	.16–.76
III	Hungarian	.66	.17–.90	.44	.17–.72
IV	Russian	.49	.14–.71	.61	.03–.87
IV	Hungarian	.59	.22–.76	.61	.22–.77

for item 4 of the Russian STAI for Russian subjects. For the Hungarian Form, item 11, "I feel self-confident," showed the lowest IRC (.17). The highest IRC for Group III was found for item 18, "I feel overexcited and rattled," for both the Russian (.66) and Hungarian (.90) Forms.

In Group IV, the weakest IRC for the Russian A-State scale was .14 for item 19, "I feel joyful," and the highest IRC for this scale was .71 for item 3, "I am tense." For this group, the highest IRC for the Hungarian A-State scale was .76 for item 12, "I feel nervous," and the lowest IRC (.22) was again found for item 9, "I feel anxious." Thus, semantic difficulties were encountered in translating "anxiety," which appears to be an ambiguous word (Lewis, 1970).

Item-Remainder Correlations for the A-Trait Scales

The range and the median item-remainder correlations for the Hungarian, English and Russian STAI A-Trait scales are presented in Table 3. The IRC for item 24, "I wish I could be as happy as others seem to be," was lowest for the English Form (.17) for Group I, and for both the Russian (.03) and Hungarian (.22) Forms in Group IV. The IRCs for item 32, "I lack self-confidence," were lowest for the Hungarian Form (.25) in Group I, and for both the English (.12) and Hungarian (.19) Forms in Group II. The IRCs for item 34, "I try to avoid facing a crisis or difficulty," were lowest for Group III for both the Russian (.16) and Hungarian (.17) Forms.

For Group I, the highest IRCs for the A-Trait scale were obtained for item 29, "I worry too much over something that really doesn't matter," for both the English (.82) and Hungarian (.82) Forms. The IRC for item 28, "I feel that difficulties are piling up so that I cannot overcome them," were highest for the English Form (.66) in Group II, and for the Hungarian Form (.77) in Group IV. Item 37, "Some unimportant thought runs through my mind and bothers me," was the best item in the Russian A-Trait scale for Group III (.76). For Group IV, the highest IRC was .87 for item 38, "I take disappointments so keenly that I can't put them out of my mind." Item 39 in Group II (.74), "I am a steady person" and item 40 in Group III (.72), "I get in a state of tension or turmoil as I think over my recent concerns and interests," had the highest IRCs for the Hungarian A-Trait scale.

Overall, the median item-remainder correlations for the A-Trait scales were lower in Groups II and III and higher in Groups I and IV (see Table 3). The median item-remainder correlations for the English and Russian Forms of the STAI A-State scale varied between .47 and .50 for the four groups, and were even higher for the Hungarian A-State scale, varying between .59 and .66. Surprisingly, the median correlation for the Hungarian A-State scale for the African students surpassed the median for both groups of Hungarian students of philology (see Table 3). In general, the item-remainder correlations for the different forms of the A-Trait scale tended to be more similar for the bilingual students than was the case for the A-State scale.

EQUIVALENCE OF THE HUNGARIAN STAI WITH THE ENGLISH AND RUSSIAN FORMS

The correlations of the Hungarian A-State and A-Trait scales with the English and Russian Forms are reported in Table 4. For both scales, the highest correlations

Table 4 Equivalence of the Hungarian STAI with the Russian and English Form

Groups	Hungarian-English		Hungarian-Russian	
	A-State	A-Trait	A-State	A-Trait
I	.92	.90	–	–
II	.90	.87	–	–
III	–	–	.66	.86
IV	–	–	.97	.98

were obtained for the Hungarian students who were studying Russian philology (Group IV). The magnitude of the equivalence correlations for the A-State and A-Trait scales for Group I (.92, .90) and Group II (.90, .87) was also quite high. While the equivalence of the Hungarian and Russian A-State scale was relatively low for Group III (.66), the A-Trait equivalence correlation for this group (.86) was similar in magnitude to those obtained for the other groups.

TEST-RETEST RELIABILITY OF THE HUNGARIAN STAI

Students in their fourth term at the Semmelweis Medical University, Budapest, were administered the STAI during a seminar on histology. These students varied in age between 19 and 27; there were 10 males and 12 females in the sample. The A-State scale was readministered after test-retest intervals of 30 minutes; the A-Trait scale was readministered after 7 days. The test-retest correlations were .93 for the A-State scale and .73 for the A-Trait scale. The means and the standard deviations for both scales were slightly lower for the second administration.

Students of the Konyves Kalman high school, Budapest, were given the Hungarian STAI on two occasions, with a test-retest interval of five days for both scales. The sample consisted of 32 students (10 boys, 22 girls) who were tested in regular classrooms during different lessons. The level of state anxiety rose from 42.7 (SD = 8.9) in the first examination to 47.1 (SD = 9.8) in the second. This difference was not statistically significant, but the correlation between the scores of the two examinations was very low (r = .30) suggesting that the two testing conditions had different effects on level of A-State for these students. In contrast, the test-retest correlation for the A-Trait scale was high (r = .86) and the mean A-Trait scores were very similar for the first (41.1, SD = 6.6) and second (40.6, SD = 6.3) administrations of the scale.

In examining the test conditions under which the STAI was administered, it was apparent that the atmosphere for the second testing was more stressful than the first test administration. The main reason for this seemed to be the presence of a rigorous mathematics teacher who created a condition of greater stress during the second examination by his remarks. The five point increase in the mean A-State score can be attributed to the greater stress created by this teacher and the mathematics lesson that followed.

THE VALIDITY OF THE HUNGARIAN STAI

Given the lack of availability of other standardized anxiety scales in Hungarian, it was not possible to evaluate the concurrent validity of the Hungarian STAI. The construct validity of the Hungarian STAI was examined by administering the scale to the same groups in various situations with differing amounts of stress.

The STAI was administered before and after an anatomy exam at the Semmelweis Medical University. It was also administered during a literature lesson and again ten days later in a more relaxed situation to students at the Kalmar High School. The mean A-State and A-Trait scores for the medical students and the high school students in the stressful and more relaxed conditions are presented in Table 5.

In the case of the anatomy examination, 20 students (10 males and 10 females, age range 19 to 27) were given the STAI-H A-State and A-Trait scales immediately before the exam. The A-State scale was readministered immediately after the exam in the dissecting room and the A-Trait scale was given a week later to 17 of the 20 students. As can be seen in Table 5, there was a sharp drop in A-State scores from before to after the anatomy exam ($p < .001$). The slight decrease in scores on the A-Trait scale was not statistically significant.

In the case of the literature class, 27 high school students (11 males and 16 females, with an age range of 15 to 16) were given the STAI-H by their own teacher at the beginning of a lesson. The STAI-H A-State and A-Trait scales were readministered to the same group 10 days later while they were taking part in an extracurricular program at which their teacher was not present. The mean A-State score obtained for the second, more relaxed condition was significantly lower than at the beginning of the literature lesson ($p < .01$) whereas the difference for the A-Trait scale was not significant. Thus, the two stressful situations elicited significant elevations in state anxiety that were reflected in the STAI-H A-State scores. At the same time, the small changes in the scores on the A-Trait scale were not statistically significant.

In a study conducted by medical nurses in various high schools in Budapest, 131

Table 5 Means and Standard Deviations for the Hungarian STAI A-State and A-Trait Scales of Medical and High School Students under Stressful and Relaxed Conditions

	State Anxiety		Trait Anxiety	
Groups	Stressful	Relaxed	Stressful	Relaxed
Medical Students				
Mean	56.9	39.7**	44.8	42.4
SD	10.3	10.7	8.8	10.2
N	20	20	20	17
High School Students				
Mean	45.7	34.2*	41.1	39.8
SD	12.2	8.1	8.3	7.5
N	27	27	27	27

*Score in the Relaxed condition is significantly lower than in the Stressful condition at $p < .01$.

**Score in the Relaxed condition is significantly lower than in the Stressful condition at $p < .001$.

Table 6 Means and Standard Deviations for the Hungarian STAI A-State and A-Trait Scales of Healthy Girls, Girls with Disposition to Vegetative Disturbances, and Girls with Vegetative Disturbances

Groups	*N*	State Anxiety		Trait Anxiety	
		Mean	*SD*	Mean	*SD*
Healthy girls	47	35.7	7.3	42.5	6.6
Disposition to vegetative disturbances	34	39.9	10.1	44.0	7.2
Vegetative disturbances	50	41.2*	11.4	45.6	8.9

*Scores of girls with vegetative disturbances were significantly higher than those of healthy girls at $p < .05$.

girls of 16–18 years were given a battery of psychological tests that included the Hungarian form of the STAI. Girls free from any signs of dysregulation of the autonomic nervous system or vegetative disturbances had low scores on the STAI-H A-State scale. A significantly higher anxiety level was detected by the A-State scale in girls with vegetative disturbances ($p < .05$). A group of girls with disposition to vegetative disturbances had higher A-State scores than a group of healthy girls and lower scores than the girls with vegetative disturbances, but these differences were not statistically significant. The means and standard deviations for the three groups are reported in Table 6.

The Hungarian Form of the STAI was given routinely at a special boarding school for handicapped children in Budapest. In a group of 60 adolescent boys with antisocial behavior who were attending this school (age 14 to 18 years), 9 boys with a heavy addiction to glue sniffing and 11 boys free from any drug dependence were identified. The mean STAI-H A-State and A-Trait scores for these two groups and for the total sample of adolescent boys are presented in Table 7. The difference in the A-State level between the addicted and drug-free groups was statistically significant ($p < .05$).

NORMS FOR THE HUNGARIAN STAI

Normative data for the Hungarian STAI were available for 83 high school students (50 males, mean age 16.8; 33 females, mean age 16.7), 69 medical university students (40 males, mean age 21.2; 29 females, mean age 20.8), and 224 adults attending an evening high school (62 males, mean age 26.4; 162 females, mean age 26.4). Since the samples were not large enough to compute separate

Table 7 Means and Standard Deviations for the Hungarian STAI A-State and A-Trait Scales in Antisocial Adolescent Boys and in Subgroups Addicted to Glue Sniffing or Free from Drug Dependence

Group	*N*	State Anxiety		Trait Anxiety	
		Mean	*SD*	Mean	*SD*
Total sample	60	37.9	9.1	43.3	7.2
Drug addicts	9	44.4*	11.5	45.4	8.7
No drug problem	11	36.3	6.1	41.4	6.3

*Scores of the drug addicts were significantly higher than those of boys with no drug problems at $p < .05$.

Table 8 Means, Standard Deviations, and Alpha Coefficients for the Hungarian STAI A-State and A-Trait Scales

		State Anxiety			Trait Anxiety		
Group	*N*	Mean	*SD*	Alpha	Mean	*SD*	Alpha
Males	152	41.4	10.4	.90	42.3	8.7	.88
Females	224	41.5	10.3	.89	43.4	8.2	.86
Total sample	376	41.5	10.3	.90	42.9	8.4	.86

norms for each group, the three groups were combined. The means, standard deviations, and alpha coefficients for the STAI-H A-State and A-Trait scales for all males and females, and for the total sample, are presented in Table 8.

The mean A-State and A-Trait scores for males and females were similar, and the A-State scores were consistently lower than the A-Trait scores for both sexes. The alpha reliability was relatively high for all groups, and slightly higher for the STAI-H A-State scale than it was for the A-Trait scale. The mean scores for the Hungarian subjects reported in Table 8 are somewhat higher than the means reported for American, Canadian and Swedish students, which varied between 35 and 39 (Spielberger et al., 1970; Endler & Magnusson, 1976).

Item-remainder correlations (IRCs) were computed for males and females, and for the total normative sample. The IRCs for the items in the A-State scale, which are reported in Table 9, ranged from .10 to .76 for males (median = .595), and from .22 to .69 for females (median = .525). The IRCs for the A-Trait items are reported in Table 10. These varied from .26 to .64 for males (median = .515), and between .13 and .61 for females (median = .48). With the exception of items 11 and 13 on the A-State scale and item 34 on the A-Trait scale, the IRCs for the Hungarian STAI items were all .30 or higher for both males and females, and most of the IRCs were greater than .40.

SUMMARY AND DISCUSSION

More than 650 subjects have been examined with the Hungarian Form of the STAI. The anxiety levels of the Hungarian subjects were found to be similar to those of French, Italian and Russian subjects, and somewhat higher than the scores of Spanish, Turkish and American subjects (Hanin, 1979; Spielberger & Diaz-Guerrero, 1976; Spielberger et al., 1970).

The validity of the Hungarian STAI A-State and A-Trait scales was examined in several different stress situations. While the Hungarian STAI A-State scale was found to be a sensitive measure of emotional reactions to stress, the A-Trait scale showed a high degree of stability in both stressful and relaxed situations. The alpha reliability was high for both the Hungarian A-State and A-Trait scales, and comparable to the reliability reported for these scales in other languages. Test-retest reliability for the A-Trait scale was relatively high. For the Hungarian Form of the A-State scale, the test-retest reliability was variable and seemed to depend on the similarity between the two testing situations.

The equivalence of the English and Hungarian Forms of the STAI was demonstrated by the high correlations obtained between these scales in two groups of English-Hungarian bilingual subjects. While very high equivalence correlations of .97

Table 9 Item-remainder Correlations (IRCs) for the Hungarian Form of the STAI A-State Scale

Item	Males ($N = 152$)	Females ($N = 224$)	Total ($N = 376$)
1. I feel calm. *Nyugodtnak érzem magam.*	.76	.66	.70
2. I feel secure. *Biztonságban érzem magam.*	.41	.49	.47
3. I am tense. *Feszültnek érzem magam.*	.55	.45	.49
4. I am regretful. *Valami bánt.*	.58	.53	.55
5. I feel at ease. *Nyugodt vagyok.*	.69	.69	.68
6. I feel upset. *Zaklatott vagyok.*	.68	.58	.62
7. I am presently worrying over possible misfortunes. *Aggódom, hogy bajba keveredem.*	.51	.35	.42
8. I feel rested. *Kipihentnek érzem magam.*	.44	.44	.43
9. I feel anxious. *Szorongok.*	.62	.48	.55
10. I feel comfortable. *Kellemesen érzem magam.*	.63	.58	.61
11. I feel self-confidence. *Bizom magamban.*	.29	.36	.33
12. I feel nervous. *Ideges vagyok.*	.61	.64	.62
13. I am jittery. *Izegni-mozogni szeretnék.*	.10	.22	.17
14. I feel "high strung." *Túlfeszitett vagyok.*	.63	.54	.58
15. I am relaxed. *Minden feszültségtől mentes vagyok.*	.55	.50	.52
16. I feel content. *Elégedett vagyok.*	.38	.52	.45
17. I am worried. *Aggódom.*	.63	.53	.57
18. I feel overexcited and rattled. *Túlzottan izgatott és feldúlt vagyok.*	.66	.57	.60
19. I feel joyful. *Vidám vagyok.*	.43	.45	.44
20. I feel pleasant. *Jól érzem magam.*	.66	.63	.64
Median correlations	.595	.525	.56
Range of correlations	.10–.76	.22–.69	.17–.70

and .98 were found between the Hungarian and Russian STAI A-State and A-Trait scales, respectively, for bilingual Hungarian students studying Russian philology, the equivalence correlations for bilingual Hungarian medical students were only .66 for the A-State scales and .86 for the A-Trait scales. Thus, the equivalence of the Hungarian and Russian A-Trait scales would appear to be well established, whereas establishing the equivalence of the Hungarian and Russian A-State measures will require further research.

Table 10 Item-remainder Correlations (IRCs) for the Hungarian Form of the STAI A-Trait Scale

Item	Males ($N = 152$)	Females ($N = 224$)	Total ($N = 376$)
21. I feel pleasant. *Jól érzem magam.*	.61	.48	.52
22. I tire quickly. *Gyorsan elfáradok.*	.45	.32	.38
23. I feel like crying. *Könnyen elsirom magam.*	.38	.30	.30
24. I wish I could be as happy as others seem to be. *Szeretnék olyan boldog lenni, mint amilyennek mások látszanak.*	.39	.31	.34
25. I am losing out on things because I cannot make up my mind soon enough. *Sokszor hátrányos helyzetbe kerülök, mert nem tudom elég gyorsan elhatározni magam.*	.54	.51	.52
26. I feel rested. *Kipihentnek érzem magam.*	.32	.40	.36
27. I am calm, cool, and collected. *Nyugodt, megfontolt és tettrekész vagyok.*	.40	.48	.45
28. I feel that difficulties are piling up so that I cannot overcome them. *Ugy érzem, hogy annyi megoldatlan problémám van, hogy nem tudok úrrá lenni rajtuk.*	.50	.50	.50
29. I worry too much over something that really does not matter. *A semmiségeket is túlzottan a szivemre veszem.*	.60	.55	.57
30. I am happy. *Boldog vagyok.*	.44	.43	.41
31. I am inclined to take things hard. *Hajlamos vagyok tulságosan komolyan venni a dolgokat.*	.45	.40	.42
32. I lack self-confidence. *Kevés az önbizalmam.*	.59	.46	.52
33. I feel secure. *Biztonságban érzem magam.*	.54	.53	.53
34. I try to avoid facing a crisis or difficulty. *A kritikus helyzetekkel és nehézségekkel való szembenézést igyekszem elkerülni.*	.26	.13	.18
35. I feel blue. *Csüggedtnek érzem magam.*	.59	.42	.50
36. I am content. *Elégedett vagyok.*	.45	.54	.49
37. Some unimportant thought runs through my mind and bothers me. *Lényegtelen dolgok is sokáig foglalkoztatnak és nem hagynak nyugodni.*	.45	.51	.47
38. I take disappointments so keenly that I cannot put them out of my mind. *A csalódások annyira megviselnek, hogy nem tudom a fejemből kiverni őket.*	.59	.55	.57

Table 10 Item-remainder Correlations (IRCs) for the Hungarian Form of the STAI A-Trait Scale (*continued*)

Item	Males ($N = 152$)	Females ($N = 224$)	Total ($N = 376$)
39. I am a steady person. *Kiegyensulyozott vagyok.*	.53	.61	.58
40. I become tense and upset when I think about my present concerns. *Feszült lelkidllapotban jutok és izgatott leszek, ha az utóbbi idöszak gondjaira, bajaira gondolok.*	.64	.51	.57
Median correlations	.515	.48	.495
Range of correlations	.26–.64	.13–.61	.18–.58

In the present study, the comparison of the responses of bilingual Hungarian students to the Hungarian, English and Russian Forms of the STAI provides some interesting data on the cross-cultural measurement of anxiety. For example, as can be noted in Tables 1 and 2, the African students (Group I) had lower scores on both the English and Hungarian Forms of the A-State and A-Trait scales than any other group. It can also be noted in these tables that both groups of medical students (Groups I and III) had lower scores than the bilingual Hungarian students who were studying English and Russian philology (Groups II and IV).

The IRCs for the several samples in the present study also provide interesting information on the cross-cultural measurement of anxiety, and on the adequacy of the Hungarian and Russian Forms of the STAI. Taking the observations of the African students and the IRC values for this group into consideration, it appears that items 9, 13, 14, 24 and 35 in the original English Form had little meaning for these students for whom English was their second language. The very low IRCs obtained in the normative samples for the Hungarian STAI for items 13 and 34 clearly indicated that these items must be replaced. The relatively low IRCs for items 11, 23 and 24 in the normative sample suggested that these items could be improved.

The low IRCs for item 9, "I feel anxious," were surprising to the writer, but consistent with Lewis's (1970) conclusion that *anxiety* is an ambiguous word. For the Hungarian students studying Russian philology (Group IV), item 9 had a lower IRC than any other item in the A-State scale. For the African students, this item had the next to the lowest IRC for the English Form of the A-State scale. In contrast, the IRCs for item 9 for Hungarian students studying English philology (Group II) were .50 and .66, respectively, for the English and Hungarian A-State scales. Thus, a high degree of familiarity with English literature seems to contribute to understanding the meaning of the term anxiety.

In summary, the results of the studies that are reported in this chapter provide evidence of the reliability and validity of the preliminary Hungarian Form of the STAI, and of its equivalence with the English and Russian Forms of the Inventory. The research findings also demonstrate the practical utility of the Hungarian STAI for evaluating the anxiety level of adolescents and young adults with educational difficulties and/or medical or psychological problems. While the Hungarian STAI A-State scale was sensitive to the amount of stress that was inherent in a particular

educational situation, the A-Trait scale appeared to measure individual differences in a relatively stable personality trait.

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