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THE FACTOR STRUCTURE AND CONSTRUCT VALIDITY OF THE KIRTON ADAPTION-INNOVATION INVENTORY

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Summary—Critics of the Kirton Adaption-Innovation Inventory (KAI) allege that (1) it is not a homogeneous measure of cognitive style, (2) the traditional three-factor model leaves too much unexplained variance so that more parsimonious scales provide a more homogeneous factor structure, and (3) the inventory confounds level and style. These propositions have been tested for samples of experienced managers in the U.K. ($N = 156$), Australia ($N = 143$) and the U.S. ($N = 131$), and for the combined sample ($N = 430$). The 13-item measure suggested by Taylor [(1989b) *Personality and Individual Differences, 9*, 921–929] produced more coherent factors than either Taylor's 20-item measure or the 32-item KAI, though with some loss of internal reliability. Taylor's claim that the abridged versions of the KAI would produce orthogonal factors was not substantiated. Kirton's claim for the homogeneity of the KAI is supported. Exploratory factor analysis confirms Taylor's suggestion that the Sufficiency of Originality (SO) subscale be divided into subfactors indicating preference for the generation and support of novel ideas and preference for change/stability. However, the view that either the KAI or the SO scale confounds level and style is not accepted.

INTRODUCTION

Kirton (1976) posits that any individual can be placed on a continuum ranging from an extremely *adaptive* approach to decision making, problem solving and creativity to an extremely *innovative* approach. Whereas the adaptor prefers a cognitive style that manifests in "doing things better", the innovator's style leads to "doing things differently". The Kirton Adaption-Innovation Inventory (KAI) records the degree of ease or difficulty respondents experience in maintaining selected adaptive and innovative behaviours; the observed range of 45 (adaptive) to 146 (innovative) falls within the theoretical range of 32–160, and the mean of general population samples ($95 +/- 0.5$) closely approximates the midpoint of the theoretical range (Kirton, 1987).

Kirton has argued that the homogeneity of the KAI is indicated by its psychometric properties. First, there are the high levels of internal reliability reported for Kirton's own validation samples (Kirton, 1976, 1987) and by numerous other researchers who have used the instrument in a range of international contexts and for a variety of purposes (Kirton, 1987, p. 45). Secondly, the item-to-rest-of-scale correlations, all of which were significant and positive, indicate the measure's internal unity. Thirdly, the inter-item correlations, all of which are positive, testify to the scale's homogeneity. The reports of these statistics are, moreover, based on (a) the main validation sample used by Kirton, (b) each of its two matched subsamples, and (c) a replication general population sample (Kirton, 1987).

Factor analyses of the KAI have generally suggested a tripartite structure (Kirton, 1987), though some studies have supported two- and four-factor solutions (e.g. Keller & Holland, 1978). The strongly supported three-factor model (Goldsmith, 1985; Hammond, 1986; Kirton, 1987), comprises: (1) Sufficiency of Originality [measured by the "SO" (sub)scale], adaptors typically present a few, usually implementable solutions to a problem, while innovators propose many, possibly impracticable solutions; (2) Efficiency (the "E" scale), adaptors prefer to progress incrementally towards a defined goal, while innovators avoid painstaking attention to detail; and (3) Rule-governance (the "R" scale), adaptors prefer to restrict their behaviour to the socially acceptable, while innovators flout convention, ignoring the rules or inventing their own.

The three-factor model proposed by Kirton has been criticized on three fronts: (1) the homogeneity of the inventory, (2) the homogeneity of the SO factor, and (3) the validity of the

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Table 1. Statistical data: national samples

	32-Item measure			20-Item measure			13-Item measure		
	Mean	SD	Cronbach Alpha	Mean	SD	Cronbach Alpha	Mean	SD	Cronbach Alpha
U.K.									
KAI	110.07	16.50	0.89	67.10	10.34	0.82	42.77	7.11	0.73
SO	46.22	6.92	0.78	28.06	5.02	0.78	17.20	3.40	0.71
E	21.97	5.44	0.76	15.11	4.14	0.72	12.60	3.72	0.76
R	41.62	7.78	0.82	23.74	5.08	0.76	12.87	3.39	0.67
Australia									
KAI	106.04	14.43	0.86	65.20	8.90	0.78	41.37	6.60	0.72
SO	46.66	7.37	0.82	29.42	4.80	0.77	18.27	3.56	0.75
E	19.86	4.69	0.70	13.31	3.82	0.74	11.10	3.31	0.72
R	39.43	6.55	0.77	22.48	4.19	0.69	11.99	2.94	0.66
U.S.									
KAI	101.94	16.77	0.88	63.23	9.80	0.78	40.47	6.81	0.68
SO	46.42	8.36	0.82	29.75	5.21	0.76	18.83	3.46	0.69
E	17.72	5.27	0.74	11.99	4.05	0.72	10.05	3.65	0.72
R	37.80	7.17	0.75	23.43	4.73	0.62	11.58	3.05	0.52

SO scale which is argued to refer wholly or in part to cognitive level or capacity rather than to cognitive style.

(1) The correlations among the subscales are adjudged low, even when significant and it may, therefore, be inadmissible to employ an aggregate KAI score to summarize an individual's cognitive style, especially in comparison with that of another person (Payne, 1987). However, lack of orthogonality among the subscales may preclude their separate and independent use (Lowe & Taylor, 1986). It may be possible to construct orthogonal, subscales by culling "poor" items from the inventory (Taylor, 1989b).

(2) Extraction of only three factors usually leaves a large proportion of the test variance unexplained: a four- or five-factor model may be superior in this respect (Taylor, 1989a). In particular, the SO scale may not be homogeneous, consisting of "a major component concerned with idea generation" and "a subsidiary element concerned with preference for stability/change" (Taylor, 1989b, p. 922). In support of this, Taylor (1989a) presents a factor analysis of the SO scale in which nine items concerned with idea generation constitute factor A, while four items concerned with change/stability, form factor B.

(3) This distinction assumes theoretical and methodological significance in that, while the items comprising factor B are claimed by Taylor to have face validity as measures of cognitive *style*, those comprising factor A are said to have face validity as measures of cognitive *capacity* and may be indicative of a capacity to generate high quality ideas (Taylor 1989a, p. 305). Payne (1987) argues, further, that the entire SO scale is a measure of cognitive capacity.

In order to examine the claims that the factorial structure of the KAI can be simplified and improved, an investigation of experienced managers in three countries has been undertaken. The first objective of the investigation was to discover by exploratory factor analysis, rather than the more forced analysis employed by Taylor, whether the bifurcation of the SO scale was a reality. The research, therefore, sought neither to extract a fixed number of factors, nor to try yet again to determine the precise factorial structure of the KAI. The second objective was to examine Taylor's claim to have produced orthogonal SO, E and R factors by reducing the original inventory to 13 items.

METHOD

The KAI was administered to post-experience managers on MBA programmes in the U.K. ($N = 156$), Australia ($N = 143$), and the U.S. ($N = 131$). The data from each of these national samples and the composite sample ($N = 430$) were factor analysed by principal components analysis followed by varimax rotation, using SPSS^x.

The use of these methods is justified primarily by the objectives stated above. Principal components analysis is preferable, given the first objective, to the maximum likelihood method used

Table 2. Eigenvalues and explained variance: national samples

	32-Item measure				20-Item measure			13-Item measure		
	I	II	III	IV	SO	E	R	SO	E	R
U.K.										
Eigenvalue	7.18	2.87	2.04	1.65	4.56	2.54	1.79	3.10	2.17	1.62
Percent of variance	22.4	9.0	6.4	5.2	22.8	12.7	9.0	23.8	16.7	12.5
Cumulative percentage	22.4	31.4	37.8	42.9	22.8	35.5	44.5	23.8	40.5	53.0
Australia										
Eigenvalue	6.33	3.29	2.07	1.56	3.99	2.87	1.73	3.13	2.29	1.49
Percent of variance	19.8	10.3	6.5	4.9	20.0	14.4	8.7	24.1	17.6	11.5
Cumulative percentage	19.8	30.1	36.5	41.4	20.0	34.4	43.0	24.1	41.7	53.2
U.S.										
Eigenvalue	7.01	2.87	1.94	1.84	4.11	2.53	1.62	2.93	2.16	1.40
Percent of variance	21.9	9.0	6.1	5.7	20.6	12.6	8.1	22.5	16.6	10.8
Cumulative percentage	21.9	30.9	36.9	42.7	20.6	33.2	41.3	22.5	39.1	49.9

by Taylor who sought to extract factor models of prespecified size. Our intent, by contrast, was to obtain as many relatively evenly balanced factors as could be justified by eigenvalues and Scree test. Principal components analysis, which does not favour the first factor to the same extent as other methods, is more suitable for this purpose. Principal components analysis is also indicated by the relatively small samples at our disposal. Finally, given its appropriateness as a statistical method, it has the advantage of offering distinct comparison with the overwhelming majority of factorial analyses of the KAI (Kirton, 1987).

Varimax rotation is appropriate in view of the second objective since it assumes the orthogonality of the factors extracted. The use of an oblique method, based on the assumption of factors being inter-correlated, would deny the possibility to falsify Taylor's claim. Varimax rotation favours Taylor's claim: this method is essential to the interpretation of any correlations that are found among the factors of the abridged inventory. Again, the use of varimax rotation is in line with most of the reported studies and permits direct comparison of results; it also avoids the controversies surrounding oblique solutions (Harman, 1967; Zeller & Carmines, 1980).

The factor solutions found for the 32-item measure for each of the samples were examined in the light of the four-factor model reported by Taylor, on the basis of which, together with additional factor analysis of the SO scale, he proposes that scale's bifurcation into elements of idea generation and preference for change/stability. The factor analyses of the shorter measures were compared with those obtained by Taylor, and were examined with reference to the homogeneity of the factors produced by these measures compared with those generated by analysis of the 32-item measure.

RESULTS

Given the diversity of the claims and arguments surrounding the KAI, the results are presented first for each of the national samples in order to identify any general patterns and only then for the composite sample to determine whether any of the observed patterns holds up in the larger context.

Results for the three national samples

All of the measures reach acceptable levels of reliability (Table 1). The U.K. and Australian means for the 32-item measure are higher than those of either the general populations or for managers generally (usually 96–98, Kirton, 1987); this is understandable given the highly self-selected groups sampled (Foxall, 1990; Kirton & Pender, 1982).

In each of the MBA samples, four-factor solutions account for 40% of the variance (Table 2).

In the case of the U.K., four factors are also necessary to account for all of the traditional SO, E, and R subscale items. For this sample, the SO scale is described by two factors, factor I consisting of items 3, 5, 11, 21 and 23, and factor II consisting of items 3, 16, 24, 26 and 31. Factor

Table 3. Four-factor models of 32-item measure: national samples

		U.K.				Australia				U.S.				Taylor			
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
21 Has original ideas	SO	78				42				76				69			
23 Proliferates ideas	SO	62				34				78				73			
19 Is stimulating	SO					66				51				60			
16 Copes with many ideas simultaneously	SO		71			78					41	64		50			
3 Will always think of something ...	SO	60	40			65				55		38		45			
5 Would sooner create than improve	SO	62												35			
11 Has fresh perspectives on old problems	SO	72				50								67			
26 Often risks doing things differently	SO		64							34		48		48	34		
12 Likes to vary set routines ...	SO											69					42
24 Prefers to work on one problem	SO		57			66					68						53
18 Can stand out in disagreement	SO					38				55				46	36		
31 Needs stimulation of frequent change	SO		69									65					49
13 Prefers gradual change	SO											63					47
14 Is thorough	E			72			72						67			79	
22 Masters all details painstakingly	E			82			75						79			54	
25 Is methodical and systematic	E			47			61				53		44			79	
4 Enjoys detailed work	E			76			71						79			57	
15 Is (not) a steady plodder	E										39			30			41
17 Is consistent	E						37		31						38	47	
28 Imposes strict order	E										39		41			40	
30 Fits readily into 'the system'	R				34				63							56	
2 Conforms	R								73							63	
20 Readily agrees with the team ...	R				50				31						35		31
8 Never seeks to bend/break rules	R							66							46		
7 Never acts without proper authority	R		34					77							57		
6 Is prudent dealing with authority	R								71						58		
29 Likes precise instructions	R				59			38			66				34		40
33 Is predictable	R				62										30		36
32 Prefers colleagues who don't 'rock the boat'	R				58							39			36		
9 Likes consistent patterns	R				52			69							(27)		
27 Works without deviation ...	R		34		31					33	46						54
10 Holds back ideas till needed	R					34				34	61			32			

III approximates the E scale and factor IV, the R scale (Table 3; in this and, where relevant, subsequent tables, only items loading higher than 0.30 are shown, and decimal points are omitted).

In the case of Australia, factor I approximates the SO scale; factor II, the E scale; and factors III and IV the R scale. Several traditional SO items (5, 12, 13, 26 and 31) do not load on any of these factors, but four of them (12, 13, 26 and 31) load highly on a fifth factor. (The loadings on this factor V are, respectively, 0.81, 0.54, 0.66, and 0.47; the factor has an eigenvalue of 1.52 and explains 4.8% of the test variance; the Cronbach alpha for this 4-item scale is 0.67.)

In the case of the U.S., factor I overlaps most with the SO scale, factor I approximates the E scale, but factor II does not correspond to any of the three traditional factors, and factor III consists largely of SO scale items, four of the seven identical to the "second SO factor" identified

Table 4. Factor structure of the 20-item measure: national samples

	Taylor			U.K.			Australia			U.S.		
Item	SO	E	R	SO	E	R	SO	E	R	SO	E	R
23	74			67			69	34		77		
21	71			79			73			69		
11	70			68			79			77		
16	58			31			43					
19	56						71			64		
26	54			44			34			31		46
3	46			69			64			46		
5	35			65		31	38					
25		79			72			63			57	
14		79			81			72			33	
4		58			67	44		75			78	
22		55			78			74			80	
17		47	39					74	36			
2			63			38		47	56			
7			59			66			35			79
30			57			60			74			
6			55						78			
8			50			48						86
20			37						66			
32	31		35			48						

Table 5. Factor structure of the 13-item measure: national samples

	Taylor			U.K.			Australia			U.S.		
Item	SO	E	R	SO	E	R	SO	E	R	SO	E	R
23	79			72			69	37		78		
21	69			75			72			73		
11	69			74			78			75		
19	56			57			77			72		
16	55			64			55					
25		79			69			67			51	
14		78			82			74			75	
4		60			74			73			79	
22		56			79			74			82	
2			66			75			68			83
30			65			70			76			76
6			60			71			73			
7			50			63			57			

Table 6. Inter-correlations of subscales for national samples defined by Kirton (32-item measure) and Taylor (20- and 13-item measures)

	32-Item measure			20-Item measure			13-Item measure		
	SO	E	R	SO	E	R	SO	E	R
U.K.									
SO	—	0.33 (0)	0.59 (0)	—	0.13 (0.064)	0.35 (0)	—	0.09 (0.130)	0.23 (0.002)
E		—	0.49 (0)		—	0.36 (0)		—	0.23 (0.003)
R			—			—			—
Australia									
SO	—	0.23 (0.003)	0.44 (0)	—	0.08 (0.184)	0.28 (0.002)	—	0.05 (0.293)	0.27 (0.001)
E		—	0.45 (0)		—	0.30 (0)		—	0.23 (0.003)
R			—			—			—
U.S.									
SO	—	0.26 (0.002)	0.64 (0)	—	0.11 (0.102)	0.42 (0)	—	0.09 (0.146)	0.27 (0.001)
E		—	0.43 (0)		—	0.33 (0)		—	0.17 (0.025)
R			—			—			—

Probabilities (one-tailed significance) shown in parentheses.

Table 7. Statistical data for composite sample

	32-Item measure			20-Item measure			12-Item measure		
	Mean	SD	Cronbach's alpha	Mean	SD	Cronbach's alpha	Mean	SD	Cronbach's alpha
KAI	106.10	16.22	0.88	65.24	9.80	0.79	41.58	6.89	0.71
SO	46.43	7.53	0.80	29.04	5.05	0.77	18.06	3.53	0.73
E	19.95	5.42	0.76	13.56	4.20	0.76	11.32	3.71	0.76
R	39.68	7.34	0.79	22.62	4.68	0.70	12.18	3.18	0.63

for the U.K. sample. The four-factor models presented for the national samples differ importantly from that presented by Taylor (Table 3).

Factor analysis of the 20-item measure reveals somewhat more coherent and homogeneous factors in the national sample data than did the full inventory, though they are not as clear-cut as those obtained by Taylor (Table 4).

Three factors account for over 40% of the variance and four for about 50% (Table 2).

Data derived from the 13-item measure generally produce an even more homogeneous factor structure (Table 5). In the case of the U.K. and Australia, only three factors were extracted. For the U.K. these correspond exactly to those described by Taylor; for Australia, the loading of item 23 on factor II represents the sole deviation from Taylor's pattern. The U.S. results are less coherent, five factors having been extracted and the three factor model, indicated by a Scree test, fails to produce loadings for 3 of the 13 items. In the U.K. and Australia, the three factors extracted account for over 50% of the variance and the first three factors extracted for the U.S. data explain 49.9%.

Whereas all of the relationships between pairs of subscale scores are significant for the data produced in response to the 32-item inventory, of which the analysis was based on the subscales

Table 8. Four-factor model for composite sample: 32-item measure

Item		Composite—32-item measure I	II	III	IV
21	SO	78			
23	SO	78			
19	SO	48			
16	SO				
3	SO	58			
5	SO	40			48
11	SO	72			
26	SO	31			50
12	SO				76
24	SO				
18	SO	42			
31	SO				53
13	SO				60
14	E		65		
22	E		80		
25	E		47		
4	E		80		
15	E				31
17	E				
28	E				
30	R			32	
2	R				
20	R				
8	R			69	
7	R			74	
6	R			55	
29	R			31	
33	R				
32	R				
9	R			47	
27	R				
10	R	43			

Table 9. Eigenvalues and explained variance for composite sample

	I	II	III	IV
32-Item measure				
Eigenvalue	6.78	3.12	1.77	1.50
Percent of variance	21.2	9.8	5.5	4.7
Cumulative percentage	21.12	30.9	36.5	41.2
20-Item measure	SO	E		R
Eigenvalue	4.09	2.84		1.60
Percent of variance	20.5	14.7		8.0
Cumulative percentage	20.5	34.7		42.7
13-Item measure				
Eigenvalue	2.91	2.39		1.47
Percent of variance	22.4	18.4		11.3
Cumulative percentage	22.4	40.8		52.1

defined by Kirton, the relationship between SO and E becomes nonsignificant for the shorter versions, for which the analysis used the subscales defined by Taylor (Table 6). Although the SO/R and E/R scales remain significantly correlated for the 20- and 13-item measures, all coefficients are lower in the case of the 20-item measure than for the full inventory, and lowest for the 13-item measure.

Results for the composite sample

The means and standard deviations of the national samples shown in Table 1 are sufficiently similar to permit their amalgamation into a single composite sample. (The largest mean difference

Table 10. Factor structure of 20-item measure: composite sample

Item	Composite—20-item measure SO	E	R
23	75		
21	78		
11	73		
16	42		53
19	53		
26	42		45
3	67		
5	45		
25		67	
14		76	
4		75	
22		79	
17		41	
2			
7			72
30			
6			30
8			71
20			
32			33

Table 11. Factor structure of 13-item measure: composite sample

Item	Composite—13-item measure SO	E	R
21	76		
11	76		
23	75		
19	64		
16	54		
22		80	
14		77	
4		76	
25		68	
30			75
6			71
2			68
7			57

Table 12. Subscale intercorrelations—composite sample

	SO	E	R
32-Item measure			
SO	—	0.25	0.55
		(0)	(0)
E		—	0.49
			(0)
R			—
20-Item measure			
SO	—	0.05	0.31
		(0.136)	(0)
E		—	0.35
			(0)
R			—
13-Item measure			
SO	—	0.02	0.21
		(0.361)	(0)
E		—	0.25
			(0)
R			—

Probabilities (one-tailed significance) shown in parentheses.

between samples is of <9 points in a 100-point observed range for the KAI.) Statistical data for this composite sample indicate generally acceptable levels of internal reliability for the 32-, 20- and 13-item measures, though they are predictably lower in the last case. The four-factor model for the 32-item measure (Table 8) again indicates two factors accounting for the SO scale items.

This model accounts for over 40% of test variance (Table 9).

The shorter measures again produce more coherent factors. In the case of the 20-item measure (Table 10), although five factors were extracted after rotation, consideration of their eigenvalues and a Scree test supports a three-factor solution, though this, like the factor analysis of the 32-item measure, accounts for only just over 40% of test variance (Table 9).

The factor structure produced for the 13-item measure (Table 11) derived from a three-factor solution, exactly matches that found by Taylor and accounts for over 50% of test variance (Table 9).

Inter-correlations of the subscales (defined according to Kirton for the 32-item measure, according to Taylor for the shorter measures) follow a similar pattern to those found for the separate samples. The correlations are greatest for the 32-item measure where all are significant. Although the SO/E correlation is nonsignificant for the shorter measures, those for SO/R and E/R remain highly significant (Table 12).

DISCUSSION

Bifurcation of the SO scale

The belief in a fourth KAI factor, obtained by bifurcating the SO scale, is strongly supported by the analysis of the composite sample and, at a lower level of aggregation, in the U.K. and U.S.

Table 13. Bifurcation of the SO scale[a]

		Factors on which items load			
Item	Taylor	U.K.	Australia	U.S.	Composite
Preference for idea generation					
3 Will always think of something when stuck	A	1, 2	1	1, 2	1
5 Would sooner create than improve	A	1			1, 2
11 Has fresh perspectives on old problems	A	1	1	1	1
18 Can stand out in disagreement against group	A		1		1
19 Is stimulating	A		1	1	1
21 Originates ideas	A	1	1	1	1
23 Proliferates ideas	A	1	1	1	1
Preference for change/stability					
12 Varies set routines at a moment's notice	B		2	2	2
13 Prefers gradual change	B		2	2	2
16 Copes with several new ideas at the same time	A	2	1	2	
24 Prefers to work on one problem at a time	B	2	1		1, 2
26 Often risks doing things differently	A	2	2	1, 2	1, 2
31 Needs the stimulation of frequent change	B	2	2	2	2

[a]The table shows whether the item loads on the first SO factor identified for the sample (1), and/or another SO factor (2), and whether each item loads on Taylor's A or B factor.

samples. Four items load on the "second SO factor" for both of these national samples: 3, 16, 26 and 31; three more load on one or other: 12, 13 and 24. Item 3 "will always think of something when stuck" undoubtedly reflects a preference for novel ideas; items 12 "varies set routines at a moment's notice", 13 "prefers gradual change", 24 "prefers to work on one problem at a time" and 32 "needs the stimulation of frequent change" reflect preferences for change/stability. The two remaining items, 16 "copes with several new ideas at the same time" and 26 "often risks doing things differently" suggest, on the basis of face validity, a preference for change/stability rather than idea generation. Table 13, which compares the SO factors thrown up by the exploratory analysis of the national and composite samples, therefore allocates these items to the "Preference for Change/Stability" factor, as opposed to the idea generation category (factor A) proposed by Taylor.

The pattern of SO subfactors shown in Table 13 substantiates the view that the SO scale measures two aspects of adaption-innovation and constitutes clearer evidence for this bifurcation than Taylor's four-factor model in which factor IV contains 5 E and R items as well as 4 SO items. It can be argued on the basis of this table that the location of items 16 and 26 to the "Preference for Change/Stability" category is justified not only on the basis of their face validity but that of the several factor analyses which are summarized.

Scale homogeneity

For the reported analysis, the statistically significant correlations among the subscales for the 32-item measure are of a magnitude sufficient to support Kirton's claim for the homogeneity of the measure. Moreover, on the basis of inter-scale correlations, the 32-item inventory provides a more reliable measure of adaption-innovation than the alternatives suggested by Taylor. However, the shorter measures accounted for a higher proportion of the variance.

The subscales defined by Taylor were not successful in producing orthogonal factors. While Taylor found no significant correlations among the factors yielded by analysis of his 13-item scale, in the reported data, despite the lower inter-correlations apparent for the shorter versions of the inventory, the SO/R and E/R relationships remain highly significant for the 13-item scale as they do for the other measures. Only the SO/E relationship becomes nonsignificant for the shorter scales.

CONCLUSION

The first objective of the research was to test by exploratory factor analysis whether the SO subscale of the KAI can be divided into elements of (1) preference for novel ideas/idea generation, and (2) preference for change/stability. The analysis supports this bifurcation, though the item composition of these subfactors is not identical to that proposed by Taylor. The second objective was to determine whether the abridged versions of the inventory suggested by Taylor produced orthogonal factors. Although both of the abridged forms of the measure produced reduced inter-factor correlations, albeit at the expense of a reduction in internal reliability, neither achieved the orthogonality sought by Taylor. The results of our analysis support Kirton's claims for the homogeneity of the original KAI as a measure of adaption-innovation. The three (or four) factors which have been consistently discovered for the KAI suggest the existence of discrete elements within a homogeneous scale, which are understandably inter-correlated, rather than independent subscales. The inherent unity of the scale is apparent from the fact that, even when it is reduced to fewer than half its original items, its factors remain coherent and inter-related.

These findings elucidate the construct validity of the KAI. That some of the items constituting the SO scale indicate a preference for generating and supporting novel ideas does not necessarily signify that they represent an aspect of cognitive capacity rather than of cognitive style. The scale reliability of the full Kirton inventory and that of its SO scale (Table 1) are strongly suggestive of internally consistent measures. There is, moreover, evidence that neither the KAI nor the SO scale correlates other than negligibly with measures of cognitive and creative level (Gryskiewicz, 1982; Kirton, 1978, 1987; Kirton & de Ciantis, 1986) and the KAI does not correlate with cognitive complexity (Goldsmith 1986, 1987; Goldsmith & Matherly, 1987).

The measure of creative performance which Lowe and Taylor (1986) found to correlate with KAI and the SO scale does not appear to imply level rather than style. Nor does our evaluation of the

face validity of idea generation as a potential subfactor of SO suggest that it is inherently a measure of level rather than style. A person's cognitive or creative capacity undoubtedly forms part of his or her cognitive or creative style and determines how this is expressed, but there is no unequivocal evidence that cognitive and creative levels are uniquely associated with either adaptiveness or innovativeness. The indications are, rather, that KAI and its components measure an individual's style and not level of performance.

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