English Abstract

This report details the revisions to and the validation of the Control, Agency, and Means-ends Interview (Skinner, Chapman & Baltes, 1988c) across six languages: German, English, Russian, Polish, Czech, and Japanese. Specifically, the original 80-item questionnaire has been reduced to 58 items (unreliable items were removed). The revised CAMI (in German, English, Russian, and Japanese only) is included in this report as appendix material. The report thereby also serves as the technical manual for presenting and coding the CAMI. In addition to this information, we present extensive validity information garnered from our Mean and Covariance Structures (MACS) analyses across these socio-cultural settings as well as longitudinally (three times of measurement) for the two Berlin samples and the Moscow sample. This validity information includes (a) model fit statistics which indicate the overall validity of the CAMI factorial structure, (b) the latent and raw data correlations among the CAMI constructs, (c) their raw data mean-levels, (d) their raw data correlations with actual school performance (and Raven intelligence when appropriate), (e) a summary of the gender and grade effects on the CAMI constructs, (f) tests of between-school differences for each of the socio-cultural settings and times of measurement, and (g) basic psychometric information such as reliability, outlier analyses, missing data estimation, skewness, and kurtosis.

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Introduction

The primary goal of this report is to examine the multi-cultural validity of the revised version of the Control, Agency and Means-Ends Interview (CAMI; Skinner, Chapman, & Baltes, 1988a, b, c). Specifically, we test the CAMI across various socio-cultural samples of children, all of whom were of middle childhood age (i.e., grades 2 through 6). We note here that the revised CAMI examined in this report is essentially the same as the original (i.e., Skinner et al., 1988a) except that some items have been removed due to unreliability (see below for details), and the instrument has been translated into Czech, Polish, Russian, and Japanese. In addition to the original English and German version of the CAMI, the Russian and Japanese translations are enclosed in the Appendix (due to technical difficulties, the Czech and Polish versions were not available at press time).

An Action Theory of School Performance-Related Beliefs

The action-theory approach represents an integrative three-fold conception; it is a comprehensive theoretical umbrella under which three major types of control-related, self-related, and causality-related beliefs are covered (M. Baltes & Baltes, 1986; Skinner, in press).

Three-fold theoretical conceptualization. Figure 1 presents a schematic representation of the theoretical framework. The theory focuses on goal-directed behavior that is produced by intentionally acting agents as the central unit of psychological analysis. In an action-theory framework, three constituents of goal-directed behavior are distinguished: the agent, various means, and an end (or outcome). The relations among these entities constitute three sets (or types) of belief systems (see e.g., Chapman, 1984; Skinner, 1985). Each belief system applies to a particular domain of human performance such as academic performance (the domain measured here), friendship acquisition, athletic performance, family relations, and so on (see e.g., Heckhausen, 1994; Little, 1995a; see Figure 1 of Appendix H).

The dimensions of the first action-related belief system are termed *Agency beliefs*. They refer to the agent's perception of his/her *access* to certain outcome-relevant means. In the school performance domain, four means to which an agent may have access are specified: Effort (e.g., trying hard), Ability (e.g., being smart), Luck (e.g., having luck), and Teachers (e.g.,

getting help from the teacher). As noted by Skinner et al. (1988b; and see Chapman & Skinner, 1989; Little, Oettingen, Stetsenko & Baltes, 1995; Stetsenko, Little, Oettingen, & Baltes, 1995; Oettingen, Little, Lindenberger, & Baltes, 1994) the agency beliefs are most closely related, conceptually, to self-efficacy beliefs (e.g., Bandura, 1977). Two points of differentiation exist, however, between the definitions of agency beliefs and self-efficacy beliefs. First, agency beliefs, unlike self-efficacy beliefs, are defined for a broad range of potentially important means, including those that are generally located both within agents (effort, ability) and outside agents (teachers and luck). Second, agency beliefs specifically assess the extent to which the child thinks he/she possesses certain means, independent of the degree to which the child thinks this means is effective. In contrast, self-efficacy beliefs generally refer to a global assessment of the accessibility of many means (and generally only effective ones).

The dimensions of the second action-related belief system are termed *Means-ends beliefs*. They refer to the utility (or effectiveness) of certain means (or causes) to achieve a positive outcome and avoid a negative outcome. In the school performance domain, five means by which a positive outcome is achieved and a negative outcome is avoided are specified: Effort (e.g., trying hard), Ability (e.g., being smart), Luck (e.g., having luck), Teachers (e.g., getting help from the teacher) and, lastly, Unknowns (i.e., unknown factors). As noted by Skinner et al. (1988b), the means-ends belief dimensions are most closely related, conceptually, to causality beliefs. However, in this conceptualization and unlike other frameworks (e.g., strategy beliefs; Skinner, Wellborn, & Connell, 1990; Skinner, in press), these beliefs about the relations between causes and outcomes refer to others, in general, and not to the particular child. That is, they reflect generalized contingency-based reasoning about the various means that stem from personal experiences as well as those of others (see Little & Lopez, 1995).

The third action-related belief system is termed *Control Expectancy*. It refers to the agent's belief that s/he can produce the desired outcome, without reference to any specific means that are potentially involved in this process. That is, Control Expectancy pertains directly to the child's general judgement of the likelihood that s/he is able to achieve school success (e.g., good school grades) and avoid failure (e.g., bad school grades).

Both theoretically and empirically, the differentiation between the three sets of beliefs and

the various subdimensions within the agency and means-ends beliefs provide unique sources of information regarding various aspects of children's reasonings about the domain of school performance (see e.g., Karasawa, Little, Miyashita, Mashima, & Azuma, 1995; Little & Lopez, 1995; Little et al., 1995; Lopez & Little, 1995b; Stetsenko et al., 1995; Oettingen, et al., 1994). Such an approach allows one to identify what children think about general contingencies in the domain of school performance, about their own role in utilizing these effective means, and about an overall likelihood of achieving or avoiding a certain outcome.

Socio-cultural Determinants of Children's Perceived Control

In most previous studies on performance-related beliefs, researchers have rarely taken a cross-cultural approach. For example, the main focus of Western research has been on individual cognitive development as a primary factor influencing and shaping children's perceived control. Clearly, particular cognitive milestones have to be attained before a child becomes able to exert control, perceive it, and form beliefs about it. As research has shown, these control-related abilities emerge at certain stages of cognitive development and have necessary age-dependent preconditions, such as the capacity to understand logical inverse relations, see one's performance from a detached perspective, and relate temporally separate outcomes to one another (see e.g. Nicholls, 1978, 1979).

However, there is growing interest in cross-cultural comparisons in the field of perceived control, self-efficacy, and other self-related concepts. As Weisz (1990) notes, once certain cognitive milestones have been attained, further development of perceived control may be determined by a diverse array of non-cognitive factors, ranging from affective states (Lewinsohn, Mischel, Chaplin, & Barton, 1980) to social stereotypes (Bandura, 1977), to collective value systems and/or to social ideologies (e.g., Meyer, 1990; Rozenholtz & Simpson, 1984; Schooler, 1990).

The effects of some concrete aspects of the socio-cultural environment on self-conceptions have been investigated in several studies. Findings show, for example, a crucial impact of different work experience (Inkeles, 1983), and type of education on beliefs about corresponding domains of performance (Kohn & Schooler, 1983; Rozenholtz & Rozenholtz, 1981). These studies suggest that the development of the ability to evaluate one's own potential to control

one's own behavior and various aspects of the environment may be a context-dependent process (see also Little & Lopez, 1995).

In recent studies of perceived control, in which the CAMI instrument has been employed, the roles of both developmental change and social environmental factors in producing performance-related beliefs have been examined (see e.g., Chapman, Skinner, & Baltes, 1990; Little et al., 1995; Oettingen, Lindenberger, & Baltes, 1992; Oettingen, in press; Oettingen et al., 1994; Skinner, 1990; Skinner, Schindler, & Tschechne, 1990; Stetsenko et al., 1995). One of the findings reported was that children's school performance-related beliefs are dependent on the learning environment and, more specifically, teacher's behavior and feedback to the students (see also Skinner, Wellborn, & Connell, 1990).

This technical report attempts to establish the utility of cross-cultural comparisons by establishing the internal and cross-sample validity of the measurement instrument.

Method

Specifics of the Operationalization

Table 1 presents a general overview of the specific dimensions within the general theoretical structure of the CAMI instrument as well as a brief description of the item composition for each dimension. As can be seen in this table, the three possible belief types represent the links between an agent, various means, and an end; furthermore, with specific reference to 4 means plus 1 unknown category, these links produce 10 possible dimensions of school performance-related belief. Also shown in Table 1 (far right column) is the number of indicators formed from the items of each dimension. These indicators are formed by randomly aggregating a positively worded item with a negatively worded item (see Table 2). Specifically, Table 2 gives the exact item numbers that are coupled to form each indicator. Appendix C gives the CAMI questionnaire in its conceptual form in English with the item numbers corresponding to (a) the reference item number for Table 2 and (b) the order in which they are administered. Appendix D is the conceptual version in German, Appendix E the presentation version in Russian, and Appendix F the presentation version in Japanese.

Table 1

Item representation of the CAMI questionnaire

Factor	Number and type of items		Number of indicators
		Agency Beliefs	
Agency: Effort	6 Items	(3 in Positive direction, 3 in Negative)	3
Agency: Ability	6 Items	(3 in Positive direction, 3 in Negative)	3
Agency: Luck	6 Items	(3 in Positive direction, 3 in Negative)	3
Agency: Teacher	6 Items	(3 in Positive direction, 3 in Negative)	3
		Control Expectancy	
	4 Items	(4 in Positive direction)	3
		Means-Ends Beliefs	
Means-Ends: Effort	6 Items	(3 in Positive direction, 3 in Negative)	3
Means-Ends: Ability	6 Items	(3 in Positive direction, 3 in Negative)	3
Means-Ends: Luck	6 Items	(3 in Positive direction, 3 in Negative)	3
Means-Ends: Teacher	6 Items	(3 in Positive direction, 3 in Negative)	3
Means-Ends: Unknown	6 Items	(3 in Positive direction, 3 in Negative)	3
	==		==
Total	58		30

Administration Procedures

The CAMI is designed as a group-administered instrument. For each of our samples, native-language speakers and proctors group-administered the CAMI to the children in their classroom without their teacher present. The group sizes ranged from 20 to 35 depending on the class size and the number of children whose parents had given permission for their child to participate. Each item was read aloud as the children silently followed along. The proctors ensured that each child answered at the pace established by the reader as well as assisted with any questions or problems. The 58-item CAMI requires approximately 30 to 45 minutes to complete, depending upon the ages of the children. For children younger than the second grade, we recommend the instrument be individually administered and that the technique of Harter be employed. Specifically, first have the child determine whether s/he generally agrees or disagrees with an item and then determine the degree of agreement or disagreement. For children older than grade 6 (the instrument has been used on adolescents as old as the 11th grade), the proctored approach used here is still recommended in order to ensure that each item is carefully considered.

Table 2

Summary of the combination of items for each construct indicator

Construct	Indicator		Items combined to form each indicator
	agEFF_i1	=	mean(of agEFF_p3 agEFF_n1);
1	agEFF_i2	=	mean(of agEFF_p1 agEFF_n3);
	agEFF_i3	=	mean(of agEFF_p2 agEFF_n2);
	agABL_i1	=	mean(of agABL_p3 agABL_n1);
2	agABL_i2	=	mean(of agABL_p2 agABL_n2);
	agABL_i3	=	mean(of agABL_p1 agABL_n3);
	agLUC_i1	=	mean(of agLUC_p2 agLUC_n2);
3	agLUC_i2	=	mean(of agLUC_p1 agLUC_n3);
	agLUC_i3	=	mean(of agLUC_p3 agLUC_n1);
	agTEA_i1	=	mean(of agTEA_p1 agTEA_n3);
4	agTEA_i2	=	mean(of agTEA_p3 agTEA_n1);
	agTEA_i3	=	mean(of agTEA_p2 agTEA_n2);
	Cntrl_i1	=	Cntrl_p3;
5	Cntrl_i2	=	mean(of Cntrl_p1 Cntrl_p2);
	Cntrl_i3	=	Cntrl_p4;
	meEFF_i1	=	mean(of meEFF_p3 meEFF_n3);
6	meEFF_i2	=	mean(of meEFF_p1 meEFF_n2);
	meEFF_i3	=	mean(of meEFF_p2 meEFF_n1);
	meABL_i1	=	mean(of meABL_p3 meABL_n1);
7	meABL_i2	=	mean(of meABL_p2 meABL_n2);
	meABL_i3	=	mean(of meABL_p1 meABL_n3);
	meLUC_i1	=	mean(of meLUC_p3 meLUC_n2);
8	meLUC_i2	=	mean(of meLUC_p1 meLUC_n1);
	meLUC_i3	=	mean(of meLUC_p2 meLUC_n3);
	meTEA_i1	=	mean(of meTEA_p3 meTEA_n2);
9	meTEA_i2	=	mean(of meTEA_p2 meTEA_n3);
	meTEA_i3	=	mean(of meTEA_p1 meTEA_n1);
	meUNK_i1	=	mean(of meUNK_p2 meUNK_n1);
10	meUNK_i2	=	mean(of meUNK_p1 meUNK_n3);
	meUNK_i3	=	mean(of meUNK_p3 meUNK_n2);

Note. ag = Agency belief, me = Means-ends belief, Cntrl = Control Belief, EFF = Effort, ABL = Ability, LUC = Luck, TEA = Teacher, _i1, _i2, _i3 = Indicator number, _p1, _p2, _p2 = Positively worded item number, _n1, _n2,_n3 = Negatively worded item number.

Table 3

Summary of the sample sizes for the various data sets by grade level and overall

	Grade															
	2			3			4			5			6			
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	Total
E90	33	25	58	35	28	63	33	31	64	43	31	74	32	22	54	313
E91	55	40	95	26	20	46	14	19	33	31	29	60	34	29	63	297
E92	47	55	102	55	41	96	35	30	65	42	37	79	42	38	80	422
M90	49	51	100	57	67	124	52	57	109	50	62	112	50	56	106	551
M92	59	59	118	36	35	71	10	12	22	35	32	67	39	41	80	358
M94	37	41	78	41	35	76	44	49	93	77	61	138	24	26	50	435
W91	47	65	112	54	61	115	46	67	113	48	56	104	29	44	73	517
W92	40	33	73	41	52	93	55	57	112	43	55	98	29	47	76	452
W93	69	87	156	32	23	55	44	51	95	57	53	110	40	60	100	516
P91	67	52	119	81	79	160	80	58	138	96	76	172	95	84	179	768
Z91	29	31	60				31	30	61				36	33	69	190
U92	69	72	141	82	50	132	71	67	138	66	58	124	66	56	122	657
J93	72	73	145	83	71	154	92	86	178	96	80	176	83	81	164	817

Note. E90 = East Berlin, 1990; E91 = East Berlin, 1991; E92 = East Berlin, 1992; M90 = Moscow, 1990; M92 = Moscow, 1992; M94 = Moscow, 1994; W91 = West Berlin, 1991; W92 = West Berlin, 1992; W93 = West Berlin, 1993; P91 = Prague, 1991; Z91 = Warsaw, 1991; U92 = Los Angeles, 1992; J93 = Japan, 1993.

Note that each item uses a 4-point response scale with each response alternatively labeled: "never", "seldom", "often", and "always", in English and "nie", "selten", "ziemlich oft", and "immer", in German, for example.

The selection of items. As noted in Table 1 and mentioned above, the revised CAMI consists of 58 items. The original CAMI consisted of 80 items, eight per domain, four positively worded and four negatively worded (Skinner et al. 1988a, b, c). However, subsequent analyses of the items within each domain showed that for each domain, six items were sufficient to represent the construct information; that is, the levels of reliability for each scale did not increase after six items were evaluated and thus, the one positively- and one negatively-worded item with the lowest item-scale correlation were removed from the questionnaire (all removed items showed item-scale correlations below .2 while the remaining items showed item-scale correlations above .3). In addition, the four negatively-worded control items showed levels of reliability below .3. Therefore, all negatively-worded items were removed. The reason for the low levels of reliability of the negatively-worded control items is, most likely, due to the double negative wording of these items plus the necessity to respond with a "never" or "always" -- the grammatical complexity led to unreliable responses. Also, the four positively-worded items all provided sufficient common information to justify keeping all four items. Thus, as shown in Table 1, each of the CAMI dimensions consists of six items, except control expectancy, which is measured with 4 items. As mentioned, these remaining 58 items are aggregated into three indicators for each of the 10 CAMI constructs. Note also that further empirical justification for the shortened revision of the CAMI is found in the high levels of fit for the confirmatory models discussed and presented below.

The aggregation of items. The six items from each domain are aggregated into composite indicators in order to represent the information from these scales in more concise form and to represent the factors in a more heterogeneous manner for use with the structural modeling techniques (e.g. Bentler, 1993; Jöreskog & Sörbom, 1989; Little, 1995b). That is, one positively- and one negatively-worded item within each domain are randomly paired to bring the total number of indicators for each construct or domain to three. The basic rationale behind creating aggregate indicators, or parcels, is that through the systematic construction of linear

composites of items from each of the dimensions more reliable and stable information specific to the dimension is captured; this is the basic idea underlying test score theory (e.g., Nunnally, 1978). Combining items into three parcels of items to represent each dimension provides higher levels of reliability per indicator and also allows for common variance among the set of indicators to identify an underlying factor. Forming parcels amplifies what the items have in common relative to their unique specificities. Thus, the parcelling of items is done in order to measure the underlying construct inherent in each dimension at the latent level with multiple indicators (Widaman & Kishton, 1995). By using three parcels of items to identify each of the latent constructs, only the reliable, shared variance of the indicators is represented at the latent level (Jöreskog & Sörbom, 1989; Widaman & Kishton, 1995). Three important features of using multiple indicators for each dimension are that (a) each of the performance belief dimensions can be represented as a latent factor in the confirmatory factor models, (b) this information is represented as reliable variance only (i.e., the information is disattenuated or corrected for unreliability), and (c) direct statistical comparisons of competing representations (e.g., possible second-order factors) are made possible.

The samples. The common grade levels available for the comparisons are grades 2 through 6; the grade level by gender frequencies for each sample are presented in Table 3. The samples that we evaluated were:

East Berlin	1990	(E90):	313 children, assessed in the Spring of 1990,
East Berlin	1991	(E91):	297 children, assessed in the Spring of 1991,
East Berlin	1992	(E92):	422 children, assessed in the Spring of 1992,
West Berlin	1991	(W91):	517 children, assessed in the Spring of 1991,
West Berlin	1992	(W92):	452 children, assessed in the Spring of 1992,
West Berlin	1993	(W93):	516 children, assessed in the Spring of 1993,
Moscow	1990	(M90):	551 children, assessed in the Fall of 1990,
Moscow	1992	(M92):	358 children, assessed in the Spring of 1992,
Moscow	1994	(M94):	435 children, assessed in the Spring of 1994,
Los Angeles[1]	1992	(U92):	657 children, assessed in the Spring of 1992,
Tokyo	1993	(J93):	817 children, assessed in the Spring of 1993,
Prague	1991	(P91):	768 children, assessed in the Spring of 1991,
Warsaw	1991	(Z91):	190 children, assessed in the Spring of 1991.

Table 4 gives the age distributions for each grade level and gender. As can be seen in the table, the ages for each grade were very similar and covered the range from approximately 7.5

[1] The Los Angeles sample was drawn from the greater Los Angeles metropolitan area; the specific school district sampled was the Ontario-Montclair school district.

Table 4

Summary of the age distributions for the various data sets by Grade level

Grade		2		3		4		5		6	
		Mean	std	Mean	std	Mean	std	Mean	std	Mean	std
E90	All	8.55	.32	9.66	.40	10.69	.45	11.76	.54	12.62	.35
	Male	8.54	.32	9.66	.37	10.76	.52	11.74	.64	12.62	.36
	Female	8.56	.33	9.66	.44	10.62	.36	11.78	.35	12.62	.35
E91	All	8.55	.36	9.48	.32	10.59	.38	11.61	.45	12.68	.43
	Male	8.55	.39	9.54	.35	10.62	.31	11.64	.53	12.68	.46
	Female	8.54	.32	9.41	.26	10.57	.44	11.57	.36	12.69	.39
E92	All	8.55	.36	9.55	.38	10.49	.30	11.57	.41	12.57	.39
	Male	8.54	.35	9.54	.40	10.55	.32	11.57	.41	12.60	.45
	Female	8.56	.38	9.55	.34	10.41	.27	11.58	.42	12.55	.33
W91	All	8.62	.42	9.63	.48	10.59	.52	11.58	.47	12.66	.46
	Male	8.61	.40	9.70	.52	10.69	.62	11.70	.53	12.84	.50
	Female	8.63	.43	9.57	.43	10.53	.43	11.48	.40	12.55	.40
W92	All	8.63	.47	9.62	.47	10.56	.40	11.64	.60	12.53	.49
	Male	8.58	.48	9.75	.49	10.64	.44	11.64	.64	12.62	.48
	Female	8.70	.44	9.52	.44	10.48	.35	11.64	.57	12.47	.50
W93	All	8.17	.94	8.94	1.00	9.82	.72	10.51	.45	11.62	.55
	Male	8.23	.97	9.11	1.19	9.87	.71	10.60	.49	11.60	.68
	Female	8.13	.92	8.71	.61	9.77	.73	10.42	.38	11.63	.45
M90	All	8.52	.36	9.61	.42	10.70	.51	11.54	.36	12.51	.35
	Male	8.53	.39	9.60	.46	10.73	.64	11.45	.39	12.51	.41
	Female	8.51	.33	9.61	.39	10.67	.34	11.61	.33	12.50	.29
M92	All	8.92	.33	9.77	.69	10.14	.34	11.09	.45	12.20	.55
	Male	8.89	.25	9.80	.79	10.06	.26	11.10	.51	12.24	.74
	Female	8.96	.39	9.73	.57	10.21	.39	11.07	.38	12.16	.26
M94	All	8.71	.63	9.68	.59	10.95	.39	11.55	.58	12.31	.75
	Male	8.67	.62	9.70	.64	10.92	.43	11.57	.60	12.34	.76
	Female	8.75	.64	9.65	.54	10.98	.35	11.52	.57	12.28	.76
U92	All	8.08	.40	9.15	.39	10.16	.43	11.14	.42	12.18	.45
	Male	8.13	.41	9.17	.38	10.20	.44	11.16	.42	12.21	.49
	Female	8.04	.37	9.13	.41	10.11	.41	11.12	.42	12.15	.38
J93	All	7.54	.29	8.52	.31	9.52	.29	10.51	.28	11.53	.27
	Male	7.54	.28	8.50	.31	9.50	.29	10.51	.29	11.50	.26
	Female	7.53	.30	8.53	.30	9.53	.28	10.50	.27	11.55	.27
P91	All	8.42	.60	9.30	.64	10.20	.75	11.37	.61	12.36	.49
	Male	8.44	.57	9.39	.69	10.29	.78	11.40	.67	12.43	.54
	Female	8.40	.65	9.22	.58	10.08	.69	11.33	.52	12.29	.42
Z91	All	8.34	.32			10.43	.28			12.46	.32
	Male	8.30	.35			10.38	.30			12.55	.35
	Female	8.38	.28			10.48	.26			12.36	.27

Note. E90 = East Berlin, 1990; E91 = East Berlin, 1991; E92 = East Berlin, 1992; M90 = Moscow, 1990; M92 = Moscow, 1992; M94 = Moscow, 1994; W91 = West Berlin, 1991; W92 = West Berlin, 1992; W93 = West Berlin, 1993; P91 = Prague, 1991; Z91 = Warsaw, 1991; U92 = Los Angeles, 1992; J93 = Japan, 1993.

to 12.5, or middle childhood, with the exception of the Tokyo sample, where the average age at each grade level was between .3 and .6 years less than the other samples. Notably, each of these samples represents lower-middle class areas in each sample (for more details see Karasawa et al., in press; Little et. al., 1995; Oettingen et al., 1994; Stetsenko et al., 1995). Also, we selected two schools per sample and within each school, we chose generally two to four classrooms. The longitudinal samples are exceptions in that some children moved to different classrooms; however, we followed only those children who stayed in the same schools. Our tests for differences between schools at each assessment occasion are presented in Appendix B, Table 35. As shown in this Table, very few mean-level, variance ,or correlation differences emerged. Thus, within-culture variability on this dimension is quite small.

Treatment of the Data

We assessed at the level of the aggregate indicators of each construct the number of missing responses, the number of outliers, as well as the skewness and kurtosis of the responses. Very few of the items in the analyses had missing data. Overall, less than .5% of the responses were missing and these values were replaced using regression techniques to estimate any missing value from non-missing items. Our assessments of the distributional characteristics (e.g., skewness, outliers) of the variables in the data set were conducted for each of the indictors of the lower-order constructs. All indicators showed no evidence of skewness or kurtosis (e.g., all skewness and kurtosis coefficients were within the $\pm$ 1 range, except for two indicators in the Tokyo sample, both related to Means-Ends Unknown; see Table 5).

Outliers for each of the indictors were identified through regression techniques (see Tabachnick & Fidell, 1989). Specifically, each of the 30 indicators was predicted by the set of 29 remaining indictors used in the analyses as well as gender, the linear effects of grade in school, and the quadratic effects of grade in school. Any data point falling outside the 99% isodensity contour (i.e., the conditional confidence interval) of the regression equation was deemed an outlier and was replaced with a value that was at the 95% isodensity contour estimated from the same regression equation. Overall, less than 2% of the responses were identified as outliers and subsequently reweighted. Table 6 gives a summary of the percent missing and the percent outliers for each of the samples.

Table 5

Skewness and Kurtosis of the CAMI constructs

Data Set		agEFF	agABL	agLUC	agTEA	Cntrl	meEFF	meABL	meLUC	meTEA	meUNK
E90	*S*	.23	.29	.15	.11	.13	.16	.23	.30	.07	.28
	K	-.35	-.32	.45	.07	-.64	-.02	.54	.08	-.29	.68
E91	*S*	-.21	.23	.10	-.06	-.17	-.14	-.04	.51	.63	.10
	K	-.25	-.32	-.02	.32	-.44	.34	.79	-.22	1.18	.26
E92	*S*	.04	.12	.09	-.44	.01	-.11	-.29	.31	.09	.44
	K	.06	.02	.14	.74	-.37	.49	.09	-.34	.18	.89
W91	*S*	-.12	.15	.16	-.06	-.19	.15	-.05	.57	.24	.01
	K	-.38	-.10	.14	-.05	-.36	.47	.33	.41	-.26	.07
W92	*S*	-.07	.16	.15	-.02	-.08	-.09	-.13	.61	.16	.52
	K	-.18	-.36	.48	-.16	-.68	.39	.23	.56	.08	1.43
W93	*S*	-.24	.13	-.13	-.34	-.12	-.09	.19	.82	.54	.31
	K	.09	-.05	.46	-.05	-.59	.26	.57	1.35	.38	.79
M90	*S*	-.02	-.14	.30	.27	-.14	-.27	.04	.53	.45	-.02
	K	-.13	-.19	-.11	-.10	-.56	.35	-.07	-.06	-.13	.17
M92	*S*	-.08	-.21	-.03	.07	-.34	-.07	-.04	.50	.50	.20
	K	-.53	.02	-.07	-.05	-.49	.09	-.22	.03	.64	.07
M94	*S*	-.27	-.15	-.19	-.23	-.33	-.06	.12	.65	.51	.19
	K	-.29	-.46	-.09	-.27	-.49	.21	-.17	-.08	-.35	-.21
U92	*S*	-.31	-.24	-.18	-.30	-.99	-.31	.10	.47	.66	.13
	K	-.13	-.13	-.13	.01	.61	.03	-.06	-.46	.05	-.26
J93	*S*	-.25	-.06	.03	-.51	.16	-.49	.00	.74	1.88	-.13
	K	.48	.54	-.50	.51	-.30	.07	-.05	-.11	4.29	-.39
P91	*S*	-.14	.01	-.05	.08	-.16	-.04	-.14	.54	.14	.09
	K	-.41	.14	.16	.22	-.26	.13	.63	.08	-.13	.19
Z91	*S*	.05	-.01	.24	.31	-.11	.07	-.27	.07	-.07	.30
	K	-.61	-.13	-.17	-.55	-.38	.52	1.03	-.16	-.45	.43

Note. *S* = Skewness, *K* = Kurtosis. E90 = East Berlin, 1990; E91= East Berlin, 1991; E92 = East Berlin, 1992; M90 = Moscow, 1990; M92 = Moscow, 1992; M9 = West Berlin, 1993; P91 = Prague, 1991; Z91 = Warsaw, 1991; U92 = Los Angeles 1992; J93 = Japan 1993.

Table 6

Summary of the percentage of extreme and missing values for the CAMI constructs

Data Set		agEFF	agABL	agLUC	agTEA	Cntrl	meEFF	meABL	meLUC	meTEA	meUNK
E90	*M*	.32	.32	.32	.64	.32	.32	.32	.32	.32	.32
	E	2.45	1.81	2.77	1.92	1.81	2.56	2.13	2.56	2.45	2.13
E91	*M*	.34	.67	.34	.34	.34	.34	.34	.67	.34	.67
	E	2.47	1.57	2.02	2.24	1.57	2.13	2.36	2.36	2.24	2.36
E92	*M*	1.66	1.90	1.66	1.66	1.42	1.90	2.13	1.42	1.90	2.13
	E	1.58	2.29	1.50	2.05	2.37	1.74	1.97	1.66	2.21	1.66
W91	*M*	.58	.58	.58	.58	.39	.58	.58	.58	.58	.58
	E	1.68	1.61	1.61	2.00	1.23	1.93	1.74	1.35	1.29	1.42
W92	*M*	1.77	1.55	1.77	1.33	1.11	1.99	1.55	1.77	1.77	2.43
	E	2.14	2.06	1.84	1.92	.96	1.62	1.99	1.99	2.29	2.14
W93	*M*	.78	.58	.58	.78	.39	.78	.78	.58	1.16	1.36
	E	2.20	1.61	1.42	1.55	1.81	1.36	1.61	1.81	1.81	1.55
M90	*M*	.00	.00	.18	.00	.00	.18	.36	.18	.36	.18
	E	1.33	2.18	2.42	1.33	1.82	1.33	2.12	2.42	1.81	1.94
M92	*M*	.84	.56	.56	.84	.56	1.12	1.40	1.40	.84	.84
	E	2.33	3.26	2.05	2.05	2.42	1.86	1.68	3.07	1.86	3.45
M94	*M*	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	E	2.30	2.22	2.15	1.23	1.53	1.38	1.46	3.60	2.15	2.22
U92	*M*	.15	.15	.15	.15	.00	.30	.15	.15	.15	.30
	E	1.42	1.27	1.22	1.07	1.67	1.42	1.17	2.03	1.47	1.22
J93	*M*	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12
	E	1.31	1.10	1.39	.94	.86	1.39	1.14	2.12	2.77	1.67
P91	*M*	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	E	1.52	1.22	2.30	1.87	1.65	1.82	1.87	2.65	2.13	2.08
Z91	*M*	1.58	1.58	1.58	1.58	.00	1.58	1.58	1.58	.00	.00
	E	1.75	1.58	2.28	.53	.70	1.93	1.93	1.93	1.40	1.58

Note. *M* = Percent missing, *E* = Percent extreme. E90 = East Berlin, 1990; E91 = East Berlin, 1991; E92 = East Berlin, 1992; M90 = Moscow, 1990; M92 = Moscow, 1992; M94 = Moscow, 1994; W91 = West Berlin, 1991; W92 = West Berlin, 1992; W93 = West Berlin, 1993; P91 = Prague, 1991; Z91 = Warsaw, 1991; U92 = Los Angeles 1992; J93 = Japan 1993.

Analytic Procedures

To evaluate the accuracy of the models tested, two measures of model fit were used, the Tucker-Lewis Rho coefficient and the Incremental Fit Index (IFI). Both of these statistics rely on the maximum likelihood $\chi 2$ statistic which measures the statistical significance of the difference between the original and reproduced covariance matrices (Jöreskog & Sörbom, 1989). Both the Rho (also termed NNFI, or non-normed fit index; see, Bentler, 1993; Bentler & Bonett, 1980; Tucker & Lewis, 1973) and IFI (see Marsh, Balla, & McDonald, 1988) coefficients assess the practical level of fit for a specified model. The practical level of fit indexed by the Rho coefficient is the proportion of fit gained relative to a Null hypothesis model that specifies no relations among the measured variables. Tucker and Lewis suggested that a Rho value of about .90 or greater is a sufficient increase in the relative fit between the Null model and the specified alternative to accept the alternative model as being an adequate representation of the underlying structure among the measured variables.

The model. As mentioned above, confirmatory analyses of the CAMI were conducted. The substantive model specified was a mean and covariances structures (MACS) confirmatory factor model of the CAMI questionnaire (see Little, 1995b, for a detailed description of these types of models and their relations to tests of factorial invariance from a selection point of view; see also, Byrne, Shavelson, & Muthén, 1989; Meredith, 1993). The basic hypothesis tested was that 10 factors underlie the CAMI instrument. Theoretically, the primary 10 factors represent the four Agency Belief domains of Effort, Ability, Luck, and Teachers, the five Mean-Ends Belief domains of Effort, Ability, Luck, Teachers, and Unknowns, and lastly the single Control Expectancy dimension. In addition to this test of the basic underlying structure of the CAMI, a second order Agency factor was hypothesized. This second-order factor was expected to represent the covariation among three of the first-order agency belief dimensions; namely Effort, Ability, and Luck -- this factor was termed Agency: EAL. A third type of model was also tested; specifically, the second-order dimension of Agency EAL was fit as a first-order factor for which the raw data scale scores for Effort, Ability, and Luck served as indicators.

The specifics of the model estimation process can most easily be explained by reference to Figure 2 (see Figure 2 of Appendix H). This basic factor model allowed estimates for only the

hypothesized pattern of factor loadings; specifically, each indicator for a given construct was allowed to load only on the hypothesized latent factor. This measurement model also allowed each factor to inter-correlate freely. Thus, the measurement model represents an oblique 10-factor solution with an idealized simple structure for the factor pattern. This model also included three additional measured constructs; as can be seen in Figure 2, these constructs represent the effects gender, linear grade, and quadratic grade. The effects of these three constructs were partialed from the CAMI constructs. Importantly, no residual correlations were estimated nor was any additional partialling from the measured variables allowed. This very strong test of the factor model was forced upon the data for two reasons. First, because of the random heterogeneous indicator composition, no item- or indicator-specific variance was expected and second, the results of this strong test, if supported, do not need to be cross-validated (because no changes or enhancements to the initial a priori theoretical conceptualization were done) and the estimates can be compared across samples in a more straightforward and meaningful way (see also Little, 1995b).

Referring to the specifics of Figure 2, only two of the CAMI constructs are represented for simplicity. Two very important features of this figure should be noted. First, this method of modeling explicitly decomposes the covariance information into two components, variance and correlation. Second, the mean level information from each of the indicators is explicitly integrated into the models (see McArdle & McDonald, 1984; Sörbom, 1981). With regard to the first important feature, representing the differences in variances is critically important, as selection theorem allows for differences in variances. Therefore, analyses of data from more than one group need to be conducted on the covariances among the indicators. Once this covariance information is represented in the latent space, the decomposition of the variance information from the correlation information is conducted. Representing the strength of relationship in terms of correlations (as opposed to covariances) is useful for two reasons. First, correlational metric is readily interpretable; second, the analytic machinery for testing the significance of the differences between correlations is well established (see Little, 1995b; Oettingen et al., 1994).

As mentioned, in addition to the basic constructs of the CAMI (i.e., 30 indicators for 10

factors in the 10-factor model and 24 indicators for 8 factors in the 8-factor representation), we included three additional single indicator variables in the models in order to estimate and thus control for (i.e., partial) their effects: linear grade, quadratic grade, and gender (see Little, 1995b).

Because we performed the analyses on moment matrices among all indicators, we specified a Mean Level factor. In Figure 2, this factor is identified as "x-bar" and is enclosed within a triangle, following the figural conventions of McArdle (e.g., McArdle & Epstein, 1987). Note that this factor was represented such that all indicators loaded on it, thereby estimating the intercept or mean levels of each indicator. In addition, we imposed metric invariance of these intercept loadings as well as the factor loadings of the indicators of each CAMI construct across the multiple groups included in the analyses (as noted by the "=" sign next to each of the factor loading estimates). By imposing metric invariance, we insured equality of measurement of all constructs in each group in the analyses. (Note, for this report, we tested metric invariance only for the between-school comparisons. In our published reports, we test metric invariance assumptions for the groups of subjects that we explicitly compare.)

Another feature that can be seen in Figure 2 is that we decompose the variance and covariance information for each of the CAMI factors into variance and correlation information by estimating a paired second-order factor for each first-order factor; this estimation procedure can be seen in Figure 2 in that each represented CAMI factor is actually represented as two factors. At the bottom of the figure are the lower-order factors, which are measured by the observed indicators. In the middle of the figure are the second-order factors, which are "measured" by the lower-order latent factors. We estimated the variance of each latent factor as a directed path from the respective second-order factor to the respective first-order factor and fixed the first-order factor variance to zero; this forces all the variance and covariance information of the first-order factor to the level of the second-order factor. We fixed the estimated latent standard deviation (i.e., the directed path between the second- and first-order factors, or the Beta estimate) at 1.0 in the first group to establish the scale of measurement (as noted by an asterisk next to the 1.0 after the noted group 1 estimate -- "G1: 1.0*"). Because of the metric invariance constraint of the indicator's loadings, we allowed this variance information

to vary freely in each subsequent group (i.e., the path labeled, "Gn: e" -- all "e's" in the figure are estimated model parameters). We fixed the variances (i.e., Psi estimates) of each second-order factor at 1.0 in each group to identify each factor and the overall model; further, because we fixed all second-order factor variances at 1.0, we could estimate the relations among the second-order factors as correlations. Also because of the metric invariance constraint, we could estimate the mean levels of the factors by fixing the means of the second-order CAMI factors in the first group and allowing the means to vary freely in each remaining group (see, McArdle & McDonald, 1984). Thus, we estimated the mean levels as mean differences relative to the first group, the variances as variance differences relative to the first group, and the covariances as correlations among the second-order factors.

Appendix G contains sample LISREL code used for estimating these models. In the appendix, only two groups are shown for simplification, each subsequent group would be identical to the second group. Also note that the input moment matrix for the analyses had the mean level information as the first column and first row of the matrix -- some moment matrices have the mean level information as the last column and last row of the matrix. Lastly, because of the large number of parameter estimates for this model, the start values, which must be quite precise, are read in from external files. These were estimated from the first, non-metrically constrained run of the models (see Figure 2 of Appendix H).

Figure 3 (i.e., Figure 3 of Appendix H) presents a figural representation of the three types of model tested for the CAMI construct. The first panel of Figure 3 shows a simple first-order representation where the factors Effort, Ability, and Luck are represented by their respective indicators. The second panel of Figure 3 shows a more complex higher-order representation of the relations among the three constructs. With this form of representation, the estimates of correlation among the three constructs are replaced with estimates of higher-order factor loadings. Mathematically, the three higher-order factor loadings reproduce exactly the same covariance information as the three lower-order factor correlations. As a consequence of the interdependence between the two models, a test of which model is better is not available. However, the relative utility of the higher-order factor can be weighed against the three lower-order factors by evaluating the pattern of relations between these two types of representation and

the remaining factors in the model (see Figure 3 of Appendix H).

More specifically, the answer to the question of which model is better focuses on the difference between (a) the pattern of correlation of the three lower-order factors with the remaining seven factors compared with (b) the pattern of correlation of the higher-order factor with the remaining seven factors. The essential questions is: Does the higher-order factor capture and reproduce the same pattern of correlation with the seven remaining factors as fully as the three lower-order factors? For example, if Effort, Ability, and Luck each correlate with Agency: Teacher at a .50 level and this covariance is also that part of the variance that each shares in common (i.e., is represented by the second order EAL factor), then a higher-order factor will correlate with Agency: Teacher at (at least) a .50 level as well. However, if the .50 correlation between, for example, Agency: Effort and Agency: Teacher is due to the unique variance of Effort (i.e., reliable variance that is not captured by the higher-order EAL factor), then the higher-order EAL factor will not capture and reproduce the same patterns of correlation with Agency: Teacher nor the six remaining first-order factors; that is, it will not do as well as the three lower-order factors (e.g., Effort, Ability, and Luck) in capturing the covariance information.

Results

The fit statistics from the three types of tested model are presented in Table 7. As can be seen in Table 7, the fit of these models are all remarkably strong and reproduce very consistent information regarding the CAMI constructs. All samples produced acceptable levels of fit (i.e., all Rho values were above .90, except Warsaw and this may be due to sample size). The primary comparisons to be made for these data are (a) across all cultures, the three tested models provided excellent levels of fit to the data and (b) going from a 10-factor solution to the 10-first-order-with-one-second-order factor solution to the 8-lower-order factor solution provided relatively consistent and equivalent levels of fit with one exception, Tokyo. The model-fit statistics for the Tokyo sample shows that the difference in the Rho values between the 10-factor and 8-factor models is greater than .05; general convention suggests that differences in Rho greater than .05 represent a significant loss in information (Tucker & Lewis, 1973; and see Little, 1995b). Only the Tokyo sample showed a significant change in the Rho statistic of

Table 7

Comparison of the relative fit statistics for the internal validity analyses

	Null	10 Factors			2nd Order Factor			Null	8 Factors		
	χ^2	$\chi^2_{(420)}$	ρ	ι	$\chi^2_{(434)}$	ρ	ι	χ^2	$\chi^2_{(272)}$	ρ	ι
E90	4210.3	672.3	.914	.933	726.64	.905	.923	2937.2	483.39	.895	.921
E91	4680.9	710.6	.912	.932	748.74	.909	.927	3365.6	535.99	.887	.915
E92	5828.3	733.6	.926	.942	780.20	.922	.936	4337.1	588.97	.897	.922
W91	6380.1	826.7	.913	.932	872.66	.909	.926	4714.3	642.88	.890	.917
W92	5623.1	753.9	.918	.936	793.10	.914	.931	4149.2	512.10	.918	.938
W93	6649.7	863.9	.909	.909	931.11	.901	.920	4931.4	622.89	.901	.925
M90	6308.7	723.1	.934	.949	775.20	.928	.942	4786.4	579.18	.911	.932
M92	4709.7	654.9	.930	.945	679.91	.929	.942	3519.6	449.34	.928	.945
M94	5312.8	700.1	.927	.943	751.53	.919	.935	4054.4	545.28	.905	.928
U92	7131.9	869.3	.915	.933	929.97	.909	.926	5574.0	590.48	.921	.940
J93	10837.0	1052.1	.923	.939	1500.21	.874	.898	8472.6	1119.34	.865	.897
P91	7825.5	881.3	.921	.938	970.02	.911	.927	6201.0	713.84	.903	.925
Z91	2395.3	608.7	.873	.904	645.82	.862	.892	1791.2	402.78	.883	.914

Note. E90 = East Berlin, 1990; E91 = East Berlin, 1991; E92 = East Berlin, 1992; M90 = Moscow, 1990; M92 = Moscow, 1992; M94 = Moscow, 1994; W91 = West Berlin, 1991; W92 = West Berlin, 1992; W93 = West Berlin, 1993; P91 = Prague, 1991; Z91 = Warsaw, 1991; U92 = Los Angeles, 1992; J93 = Japan, 1993.

χ^2 = The maximum Likelihood chi-square statistic

ρ = the non-normed fit index

ι = the incremental fit index

greater than .05. The reason for this is that Agency: Luck is not highly correlated with Agency: Effort and Agency: Ability (see Karasawa et al., in press, for a description of the reasons why) and thus, the Agency: EAL representation is inappropriate for this sample. However, the primary observation that is apparent here is that both a 10-factor and an 8-factor representation of the data are supported for the other samples and that the 10-factor solution holds for all samples. In terms of cross-cultural comparisons, then, the 10-factor solution is the most valid of the possible representations.

Because our models also contained the effects of gender, linear grade, and quadratic grade, we present a summary of these effects in Table 8. For the gender effects, girls were coded higher than boys; therefore, positive z-values greater than 1.96 indicate higher beliefs for girls, negative z-values favor the boys. The z-values for the grade-effects are interpreted similarly. Specifically, a positive z-value for grade indicates a positive linear increase. If this effect is accompanied by a positive quadratic component, this general linear increase accelerates with age cohort. If a positive linear effect is accompanied by a negative quadratic component, then the effect decelerates with age cohort.

We present the internal relations among the CAMI constructs in Appendix A . These tables (i.e. Table 9 through 21) provide a summary of the information gleaned from the internal validity models. Each table contains four matrices of correlation among the CAMI constructs. The most important point to note about these matrices is the remarkable similarity, and thus stability, of the estimates of correlation. That is, each matrix represents the estimated set of relations among the CAMI constructs *from different models* and, yet, the correlations emerged as nearly isomorphic in each. The first 3 matrices listed in each table are LISREL maximum likelihood estimates of the latent correlation from the three MACS models: the 10-factor model, the 10-factor-plus-one-higher-order factor model and the 8-factor model, respectively. The last matrix (bottom panel of each table) contains two estimates of correlation. Below the diagonal of the matrix are the raw data correlations and above the diagonal are the simple raw data corrections for unreliability (see Nunnally, 1978: $R_{12} = r_{12} / (\text{sqrt}(r_{11}) * \text{sqrt}(r_{22}))$. The diagonal elements marked by an asterisks are the internal consistency reliability estimates (Cronbach, 1951; Widaman & Hays, 1986).

Table 8

z-values for Gender, Grade, and Grade2 effects

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
						East Berlin 1990					
Gender	1.53	1.93	1.25	2.55	3.32	2.12	-.64	-.65	.51	-.56	-.50
Grade	-.63	-.07	-1.99	-3.17	-.35	-1.75	4.16	-.06	-3.54	2.69	.17
GradeQ	1.90	1.01	1.39	2.03	1.78	1.51	0.97	1.25	3.22	3.07	-2.87
						East Berlin 1991					
Gender	.40	1.42	.60	.60	1.35	.97	-.99	-1.00	2.14	-.83	.50
Grade	-.88	-1.75	-3.23	-6.09	-3.24	-3.95	2.56	-.87	-6.39	-2.79	.28
GradeQ	.38	-.09	.16	.24	.69	.14	.96	1.68	2.84	3.05	-.29
						East Berlin 1992					
Gender	2.42	1.92	1.13	3.45	2.79	2.38	-.46	-.88	.95	-.15	-1.15
Grade	1.62	.85	-.75	-3.27	-1.19	-1.04	2.94	.04	-6.40	-.72	-.54
GradeQ	-.28	-.32	.35	1.34	-.06	.47	-1.90	-.73	3.09	1.61	1.74
						West Berlin 1991					
Gender	-.34	.30	-1.55	1.21	1.56	-.23	.54	-.28	.00	1.89	.30
Grade	.37	.53	-.55	-3.97	-.73	-.95	4.14	-1.69	-7.60	-3.40	1.32
GradeQ	1.65	.39	1.15	1.58	-1.33	1.06	1.01	2.68	1.74	3.69	-1.82
						West Berlin 1992					
Gender	-.96	.84	-.41	.09	2.60	.30	1.97	-1.31	-.92	-.89	-.10
Grade	-.06	-.76	1.01	-3.42	-.10	-1.40	3.15	-1.65	-8.24	-1.14	-2.61
GradeQ	2.11	1.90	1.24	2.56	-.29	2.20	1.40	-.06	2.91	2.08	.12
						West Berlin 1993					
Gender	-1.70	-1.28	-2.53	-.37	.82	-1.62	-1.09	-2.16	.52	.45	-.23
Grade	2.74	1.99	1.55	-2.59	.97	.74	2.69	-3.50	-6.33	-3.50	.75
GradeQ	-.59	-1.70	-.81	.54	-1.58	-.88	-.24	-.88	1.92	3.32	-1.11

Table 8, continued

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
						Moscow 1990					
Gender	4.13	5.47	4.05	4.08	3.33	5.19	-.71	-1.86	.85	-1.13	-.86
Grade	-2.10	-.54	1.75	-3.01	-2.67	-.75	1.87	-2.21	-6.42	-1.40	-3.84
GradeQ	.71	-1.01	.80	.11	-.71	.03	.57	1.06	3.04	4.78	1.28
						Moscow 1992					
Gender	3.56	4.76	2.45	1.99	3.39	4.00	-.45	-1.79	-.45	-1.14	-.76
Grade	-1.73	-.41	.77	-2.88	-.77	-.97	.08	1.38	-.34	1.27	-2.54
GradeQ	.33	-.28	-.72	.09	-1.24	-.38	.74	.54	3.98	1.80	3.68
						Moscow 1994					
Gender	2.87	4.28	1.74	3.16	4.38	3.79	.26	-3.50	-1.99	-2.44	-1.56
Grade	-4.61	-2.19	-.59	-2.72	-.82	-2.29	-3.70	-2.03	.36	.61	1.02
GradeQ	.65	-0.74	-1.20	-0.93	-.43	-1.24	-.08	.01	1.38	2.06	-.95
						Los Angeles 1992					
Gender	.83	5.07	1.47	3.48	2.43	3.68	-1.68	-2.47	-.60	-2.33	-.66
Grade	.49	-2.07	-2.85	-4.12	-2.13	-3.43	5.01	.69	-7.26	-3.33	-3.36
GradeQ	-1.63	-3.55	-.72	-2.71	-3.29	-2.71	-.34	1.15	3.19	6.09	1.54
						Tokyo 1993					
Gender	.63	3.94	-2.77	2.95	2.60	.40	-.53	-3.81	2.31	-2.00	-.46
Grade	-1.31	-.06	-3.23	-3.30	1.01	-1.28	8.17	2.92	-5.51	-3.98	-3.43
GradeQ	-.44	-.06	1.35	.87	.78	.47	-5.44	-1.76	1.36	1.01	-2.51
						Prague 1991					
Gender	1.51	3.09	.25	1.13	2.75	1.45	-1.67	-1.37	.84	-1.15	-.15
Grade	-5.27	.29	-3.56	-6.20	-.74	-3.74	-1.19	-2.73	-6.00	-.42	-2.82
GradeQ	-1.10	-4.72	-1.04	-1.58	-2.70	-2.81	-.97	1.19	5.21	5.05	4.33
						Warsaw 1991					
Gender	3.31	4.75	1.64	3.50	5.07	4.37	-1.14	-1.65	-2.23	-1.99	-1.53
Grade	.65	1.68	.12	.05	-2.58	.83	.50	-1.53	-4.07	-1.23	-.53
GradeQ	.68	-.92	.89	.78	.49	.01	-1.92	-.89	1.11	.22	-1.12

Note. Cntrl = control expectancy, agEFF = agency for effort, agABL = agency for ability, agLUC = agency for luck, agTEA = agency for teacher, agEAL = agency for effort, ability and luck combined, meEFF = means ends for effort, meABL = means ends for effort, meLUC = means ends for luck, meTEA = means ends for teacher, meUNK = means ends for unknown.

As can be seen in these tables, the reliabilities of the factors are all at a moderate level. This finding suggests that some procedure for disattenuation is necessary in order to uncover the underlying relationships between the constructs. In fact, the marked changes in the estimated levels of correlation between the constructs can be seen both in the raw corrections of the correlations and in the maximum likelihood estimates of the disattenuated relations.

Appendix B contains the rawdata correlations between the CAMI constructs and the children's actual school performance (as rated by the teachers). These tables (Tables 22 - 34) represent the external validity or predictive validity of the CAMI constructs. As can be seen throughout these tables, the Agency and Control dimensions show the strongest predictive relations, whereas the Means-ends beliefs did not predict academic performance.

Discussion and Conclusions

One important point of critical discussion exists and surrounds the levels of reliability for the constructs. The levels of reliability were uniformly in the low 70s, suggesting similarity of the measurement qualities of the CAMI constructs across cultures. However, these relatively lower levels of reliability also suggest that the measurement qualities of the instrument can be improved. At least two possible sources of unreliability exist for this instrument in its current form. First, the statements that a child must read are sometimes wordy. A careful analysis of the sentence structure of many of the items shows that some words are superfluous to the communicative intent of the statement. Second, the response alternatives of never, seldom, often, and always can be construed as logically at odds with the intent of the statement, particularly the negatively worded items. This confusion is likely randomly distributed, which is only problematic for the reliability of the instrument and not necessarily its validity. Having pointed out the reliability problems, a second point here should be made. Efforts to re-word the items may result in systematic changes to the reliable variance components of the items (i.e., the validity) and may produce a less heterogeneous measurement space. Any changes to the items will need to be carefully studied and validated. Using a different response scale, however, may be more easily implemented if one does not wish to compare precise values of past research with the newly obtained data; only relative patterns can be evaluated, unless some form of norming or equating procedure is conducted. We note here, however, that an instrument has

been developed for other domains as well as the academic performance domain that is simpler in format and produces higher reliabilities (i.e., the Multi-CAMI; Little, 1995a). In addition, a more behaviorally-oriented instrument of children's strategic control has been developed (i.e., the BISC; Lopez & Little, 1995a).

Given the high number of complications in translating an instrument such as the CAMI for use in many cultures, the results of these confirmatory analyses are extremely encouraging. The primary conclusion drawn here is that this instrument has been successfully translated into the various languages represented by the cultures because (a) the configural structure of perceived control as assessed by the CAMI instrument was ostensibly identical for each of the samples, and (b) the metric structure of the performance-related beliefs as assessed by the CAMI instrument is, also, nearly identical.

Regarding the questions of whether a 10- or 8-factor solution is more appropriate, the distinctions between the two types of models will have to rely on external validity considerations such as: do the dimensions of Effort, Ability, or Luck make unique, differential predictions (our published data suggests so; see e.g., Little et al., 1995; Karasawa et al., in press). Alternatively, if the three dimensions behave in the same way, then the EAL representation of their influence is supported. For ease of modeling, the 8 lower-order factor representation is simpler and more stable to estimate, especially with smaller sample sizes, such as the 190 subjects from Warsaw; furthermore, this sample size issue is important for any by grade comparisons of these constructs. Given the data patterns presented in this technical report, both models will need to be evaluated and where differences emerge they should follow from theory. However, given the nature of the Tokyo sample, this statement would need to tempered by the following: Any comparisons to the Tokyo sample would have to be made on the 10-factor model only, because the 8-factor model is not supported in the Tokyo data; that is, the "lowest common denominator" for these comparisons would be the full 10-factor model.

References

Baltes, M. M., & Baltes, P. B. (Eds.) (1986). *The psychology of control and aging.* Hillsdale, NJ: Erlbaum.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84,* 191-215.

Bentler, P. M. (1993). *EQS Structural Equations Program Manual.* Los Angeles, CA: BMDP Statistical Software.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88,* 588-606.

Byrne, B. M., Shavelson, R. J., & Muthén, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin, 105,* 456-466.

Chapman, M. (1984). Intentional action as a paradigm for developmental psychology: A symposium. *Human Development, 27,* 113-144.

Chapman, M., & Skinner, E. A. (1989). Children's agency beliefs, cognitive performance, and conceptions of effort and ability: Individual and developmental differences. *Child Development, 60,* 1229-1238.

Chapman, M., Skinner, E. A., & Baltes, P. B. (1990). Interpreting correlations between children's perceived control and cognitive performance: Control, agency, or means-ends beliefs? *Developmental Psychology, 26,* 246-253.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika,* 16, 297-334.

Heckhausen, J. (1994) *The Control, Agency, and Means-ends Beliefs in Adulthood Questionnaire (CAMAQ): A new measurement of adults 'perceived control in work, family and community.* Berlin, Germany: Max-Planck-Institute for Human Development and Education.

Jöreskog, K. G., & Sörbom, D. (1989). *LISREL 7: A guide to the program and applications.* Chicago, IL: SPSS.

Inkeles A. (1983). *Exploring Individual Modernity.* New York, NY: Columbia University

Press.

Karasawa, M., Little, T. D., Miyashita, T., Mashima, M., & Azuma, H. (in press). Japanese children's action-related perceived control of school performance. *International Journal of Behavioral Development, 00*, 000-000.

Kohn, M. L., & Schooler, C. (1983). *Work and personality: An inquiry into the impact of social stratification.* Norwood, NJ: Ablex.

Lewinsohn, P., Mischel, W., Chaplin, W., & Barton R. (1980). Social competence and depression: The role of illusory self-perceptions. *Journal of Abnormal Psychology, 89*, 203-212.

Little, T. D. (1995a). *Multi-CAM, A Multi-dimensional instrument for assessing children's action-related perceived control in the domains of friendship and academic performance. (ACCD Technical Report No. 2).* Berlin, Germany: Max Planck Institute for Human Development and Education.

Little, T. D. (1995b). *Selection effects and factorial invariance in mean and covariance structures (MACS) analyses of cross-cultural data.* Manuscript submitted for publication.

Little, T. D., & Lopez, D. F. (1995). *Specificity and universality in children's causal conceptions about school performance.* Manuscript submitted for publication.

Little, T. D., Oettingen, G., Stetsenko, A., & Baltes, P. B. (1995). Children's action-related perceived control of school performance: How do American children compare to German and Russian children? *Journal of Personality and Social Psychology, 00*, 000-000.

Lopez, D. F., & Little, T. D. (1995a). *BISC: The Behavioral Inventory of Strategic Control (ACCD Technical Report No. 3).* Berlin, Germany: Max Planck Institute of Human Development and Education.

Lopez, D. F., & Little, T. D. (1995b). *Children's action-related perceived control and emotional adjustment in the social domain.* Manuscript submitted for publication.

Marsh, H. W., Balla, J. R., & McDonald, R. P. (1988). Goodness-of-fit indexes in confirmatory factor analysis: The effect of sample size. *Psychological Bulletin, 103*, 391-410.

McArdle, J. J., & McDonald, R. P. (1984). Some algebraic properties of the reticular action

model for moment structures. *The British Journal of Mathematical and Statistical Psychology, 37*, 234-251.

McArdle, J. J., & Epstein, D. (1987). Latent growth curves within developmental structural equation models. *Child Development, 58*, 110-133.

Meredith, W. (1993). Measurement invariance, factor analysis and factorial invariance. *Psychometrika, 58*, 525-543.

Meyer, J. W. (1990). Individualism: Social experience and cultural formulation. In J. Rodin, C. Schooler, & K. W. Schaie (Eds.), *Self-directedness: Cause and effects throughout the life course* (pp. 51-58). Hillsdale, NJ: Erlbaum.

Nicholls, J. G. (1978). The Development of the concepts of effort and ability, perceptions of academic attainment, and the understanding that difficult tasks require more ability. *Child Development, 49*, 800-814.

Nicholls, J. G. (1979). Quality and equality in intellectual development: The role of motivation in education. *American Psychologist, 11*, 1071-1084.

Nunnally, J. C. (1978). *Psychometric theory* (2nd Ed.). New York, NY: McGraw-Hill.

Oettingen, G., Lindenberger, U., & Baltes, P. B. (1992). Sind die schulleistungsbezogenen Überzeugungen Ostberliner Kinder entwicklungshemmend? *Zeitschrift für Pädagogik, 38*, 299-324.

Oettingen, G., Little, T. D., Lindenberger, U., & Baltes, P. B. (1994). Causality, agency, and control beliefs in east versus west Berlin children: a natural experiment on the role of context. *Journal of Personality and Social Psychology, 66*, 579-595.

Rozenholtz, S. J., & Rozenholtz S. H. (1981). Classroom organization and the perception of ability. *Sociology of Education, 54*, 132-140.

Rozenholtz, S. J., & Simpson, C. (1984). The formation of ability conceptions: Developmental trend or social construction? *Review of Educational Research, 54*, 31-63.

Schooler C. (1990). Individualism and the historical and social-structural determinants of peoples' concerns over self-directedness and efficacy. In J. Rodin, C. Schooler, & K. W. Schaie (Eds.), *Self-directedness: Cause and effects throughout the life course* (pp. 19-49). Hillsdale, NJ: Erlbaum.

Skinner, E. A. (1985). Action, control judgments, and the structure of control experience. *Psychological Review, 92*, 39-50.

Skinner, E. A. (1990). Age differences in the dimensions of perceived control during middle childhood: Implications for developmental conceptualizations and research. *Child Development, 61,* 1882-1890.

Skinner, E. A.. (in press). *Perceived control, motivation, and coping*. Beverly Hills, CA: Sage.

Skinner, E. A., Chapman, M., & Baltes, P. B. (1988a). The control, agency, and means-ends beliefs interview. *Materialien aus der Bildungsforschung, 31*. Berlin: Max Planck Institute for Human Development and Education.

Skinner, E. A., Chapman, M., & Baltes, P. B. (1988b). Children's beliefs about control, means-ends, and agency: Developmental differences during middle childhood. *International Journal of Behavioral Development, 2*, 369-388.

Skinner, E. A., Chapman, M., & Baltes, P. B. (1988c). Control, means-ends, and agency beliefs: A new conceptualization and its measurement during childhood. *Journal of Personality and Social Psychology, 54*, 117-133.

Skinner E. A., Schindler A., & Tschechne M. (1990). Self-other differences in children's perceptions about the causes of important events. *Journal of Personality and Social Psychology, 58,* 1, 144-155.

Skinner E. A., Wellborn J. G., & Connell J. P. (1990). What it takes to do well in school and whether I've got it: A process model of perceived control and children's engagement and achievement in school. *Journal of Educational Psychology, 82*, 1, 22-32.

Sörbom, D. (1981). Structural equation models with structured means. In D. Sörbom & H. Wold (Eds.), *Systems under direct observation: Causality, structure and prediction.* Amsterdam: North-Holland Publishing Co.

Stetsenko, A., Little, T. D., Oettingen, G., & Baltes, P. B. (1995). Agency, control and means-ends beliefs about school performance in Moscow children: How similar are they to beliefs of Western children? *Developmental Psychology, 31*, 000-000.

Tabachnick, B. G., & Fidell, L. S. (1989). *Using multivariate statistics* (2nd Ed.). New

York, NY: Harper & Row.

Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika, 38*, 1-10.

Weisz J. R. (1990). Development of control-related beliefs, goals, and styles in childhood and adolescence: A clinical perspective. In J. Rodin, C. Schooler, & K. W. Schaie (Eds.), *Self-directedness: Cause and effects throughout the life course* (pp. 103-145). Hillsdale, NJ: Erlbaum.

Widaman, K. F., & Hays, R. (1986). Alpha reliability program. *Applied Psychological Measurement, 10*, 108.

Widaman, K. F., & Kishton, J. (1995). *Alternative bases for parcelling items for confirmatory analyses: The item-versus-parcel controversy revisited.* Manuscript submitted for publication.

Appendix A:

Relations among the CAMI constructs for all samples.

Table 9

Relations among the CAMI constructs for East Berlin 1990 (n = 313)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	871	---								
agABL	717	911	---							
agLUC	792	915	888	---						
agTEA	526	673	594	648	---					
meEFF	462	317	192	137	192	---				
meABL	368	177	236	216	076	805	---			
meLUC	028	-235	-205	-136	-156	-062	235	---		
meTEA	-032	-276	-057	-077	-396	-013	292	625	---	
meUNK	-026	-185	-223	-192	-214	062	150	336	350	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	849	---						
agTEA	526	686	---					
meEFF	465	253	194	---				
meABL	369	224	076	808	---			
meLUC	027	-207	-156	-059	236	---		
meTEA	-027	-164	-391	-002	296	627	---	
meUNK	-024	-201	-213	067	150	336	350	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-845	---						
agTEA	524	672	---					
meEFF	465	247	191	---				
meABL	369	210	074	808	---			
meLUC	027	-210	-154	-059	236	---		
meTEA	-027	-174	-391	-002	296	628	---	
meUNK	-025	-205	-215	067	149	336	350	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*825	793	672	728	497	857	426	308	035	-014	-030
agEFF	680	*893	876	874	651		327	166	-231	-266	-156
agABL	553	749	*819	893	598		196	225	-199	-060	-196
agLUC	589	736	720	*794	648		151	216	-130	-064	-171
agTEA	376	513	451	481	*695	741	188	070	-172	-386	-189
agEAL	669	913	911	897	530	*738	267	237	-221	-155	-204
meEFF	299	239	137	104	121	177	*596	793	-060	-013	066
meABL	223	125	162	154	046	162	489	*636	225	280	149
meLUC	028	-191	-157	-101	-125	-166	-041	157	*768	635	352
meTEA	-011	-208	-045	-047	-267	-111	-008	185	461	*688	352
meUNK	-023	-124	-150	-129	-133	-149	043	101	261	247	*716
Mean	2.750	2.878	2.713	2.577	2.797	2.723	2.678	2.404	1.829	1.934	2.282
Std	611	504	523	475	460	454	390	418	455	441	445

Table 10

Relations among the CAMI constructs for East Berlin 1991 (n = 297)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	852	---								
agABL	820	906	---							
agLUC	776	895	933	---						
agTEA	558	727	633	702	---					
meEFF	325	273	375	250	085	---				
meABL	297	082	234	161	-036	750	---			
meLUC	-190	-245	-187	-134	-307	102	331	---		
meTEA	-100	-247	-084	-141	-443	046	230	661	---	
meUNK	-249	-409	-313	-365	-328	116	142	383	263	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	859	---						
agTEA	560	721	---					
meEFF	324	324	083	---				
meABL	299	172	-036	749	---			
meLUC	-189	-205	-307	102	330	---		
meTEA	-099	-164	-442	046	227	661	---	
meUNK	-255	-388	-318	116	137	387	262	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-863	---						
agTEA	560	724	---					
meEFF	324	313	082	---				
meABL	299	159	-036	749	---			
meLUC	-189	-209	-307	102	330	---		
meTEA	-099	-174	-442	046	227	661	---	
meUNK	-254	-386	-320	116	138	387	262	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*826	789	757	748	547	884	300	304	-189	-116	-255
agEFF	680	*899	867	866	714		238	078	-258	-240	-382
agABL	636	760	*856	915	617		334	251	-191	-082	-346
agLUC	605	730	753	*791	699		221	171	-149	-145	-371
agTEA	413	561	474	516	*688	779	067	-029	-337	-447	-307
agEAL	703	912	923	900	566	*766	308	193	-233	-180	-422
meEFF	236	195	267	170	048	233	*748	742	078	042	087
meABL	222	059	186	122	-020	136	516	*646	376	268	132
meLUC	-153	-217	-157	-118	-248	-181	060	269	*790	687	381
meTEA	-092	-200	-066	-114	-326	-138	032	189	536	*773	264
meUNK	-199	-310	-274	-283	-218	-317	065	091	290	199	*734
Mean	2.828	3.004	2.778	2.664	2.944	2.815	2.741	2.449	1.818	1.950	2.199
Std	614	515	538	471	481	463	429	454	490	500	442

Table 11

Relations among the CAMI constructs for East Berlin 1992 (n = 422)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	843	---								
agABL	789	887	---							
agLUC	890	932	971	---						
agTEA	480	614	512	539	---					
meEFF	435	405	255	323	120	---				
meABL	236	165	103	184	028	691	---			
meLUC	-254	-356	-342	-236	-152	-196	300	---		
meTEA	-049	-194	-141	-055	-264	017	231	633	---	
meUNK	-238	-280	-344	-271	-200	033	198	327	314	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	875	---						
agTEA	482	584	---					
meEFF	429	337	117	---				
meABL	236	160	030	692	---			
meLUC	-255	-330	-151	-196	300	---		
meTEA	-048	-136	-263	017	231	630	---	
meUNK	-239	-311	-201	035	199	327	314	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-874	---						
agTEA	482	581	---					
meEFF	429	341	117	---				
meABL	236	158	030	692	---			
meLUC	-255	-324	-151	-196	300	---		
meTEA	-049	-137	-263	017	231	630	---	
meUNK	-239	-307	-201	035	199	327	314	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*820	772	773	874	459	898	430	209	-233	-032	-251
agEFF	661	*895	845	894	601		407	158	-347	-180	-269
agABL	637	726	*826	964	513		264	089	-340	-139	-342
agLUC	687	734	761	*753	540		342	152	-239	-057	-270
agTEA	356	487	400	402	*734	617	127	012	-145	-251	-190
agEAL	727	902	917	909	472	*798	377	147	-349	-144	-330
meEFF	307	304	189	234	086	266	*621	703	-209	019	033
meABL	156	123	066	109	009	108	456	*676	313	211	203
meLUC	-188	-292	-276	-185	-111	-278	-147	229	*794	632	340
meTEA	-025	-148	-109	-043	-187	-111	013	150	488	*751	321
meUNK	-199	-223	-272	-205	-142	-258	023	146	265	244	*766
Mean	2.756	2.962	2.754	2.665	2.903	2.794	2.710	2.434	1.906	1.965	2.290
Std	621	482	509	453	488	438	410	403	503	449	466

Table 12

Relations among the CAMI constructs for West Berlin 1991 (n = 517)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	827	---								
agABL	818	954	---							
agLUC	793	840	905	---						
agTEA	502	637	610	577	---					
meEFF	333	286	226	180	225	---				
meABL	290	218	233	254	155	827	---			
meLUC	-110	-311	-213	-057	-186	-037	261	---		
meTEA	-037	-218	-142	-032	-334	055	251	704	---	
meUNK	-122	-237	-214	-231	-213	053	160	323	186	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	858	---						
agTEA	502	644	---					
meEFF	333	252	226	---				
meABL	290	247	155	828	---			
meLUC	-110	-222	-186	-038	260	---		
meTEA	-037	-150	-334	054	251	706	---	
meUNK	-120	-240	-213	054	160	322	186	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-852	---						
agTEA	502	642	---					
meEFF	333	247	226	---				
meABL	290	244	155	828	---			
meLUC	-110	-220	-186	-038	260	---		
meTEA	-037	-149	-334	054	251	706	---	
meUNK	-120	-238	-213	054	160	322	187	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*772	761	740	766	496	905	300	288	-102	-024	-134
agEFF	626	*878	880	797	631		245	219	-293	-204	-233
agABL	583	739	*804	881	610		205	242	-208	-140	-211
agLUC	603	669	707	*802	597		163	271	-060	-046	-231
agTEA	373	506	468	458	*732	734	231	157	-187	-325	-217
agEAL	673	893	915	881	532	*717	246	292	-227	-157	-269
meEFF	220	192	153	122	165	174	*694	837	-027	037	062
meABL	200	162	171	191	106	195	551	*624	315	282	158
meLUC	-077	-237	-161	-046	-138	-165	-019	215	*744	709	308
meTEA	-018	-158	-104	-034	-230	-110	026	184	506	*685	201
meUNK	-100	-185	-160	-175	-157	-193	044	106	225	141	*717
Mean	2.897	3.073	2.827	2.736	2.926	2.879	2.698	2.425	1.833	1.833	2.195
Std	616	486	523	485	499	447	430	467	486	452	467

Table 13

Relations among the CAMI constructs for West Berlin 1992 (n = 452)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	819	---								
agABL	795	882	---							
agLUC	848	899	903	---						
agTEA	425	664	514	572	---					
meEFF	395	316	323	209	130	---				
meABL	129	070	077	079	012	654	---			
meLUC	-182	-259	-225	-113	-158	-151	244	---		
meTEA	-111	-271	-142	-102	-272	-081	272	566	---	
meUNK	-179	-219	-218	-218	-249	-056	137	221	149	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	867	---						
agTEA	425	633	---					
meEFF	397	300	131	---				
meABL	129	086	012	652	---			
meLUC	-182	-204	-159	-150	243	---		
meTEA	-111	-181	-272	-081	273	565	---	
meUNK	-179	-232	-250	-056	137	222	147	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-868	---						
agTEA	425	623	---					
meEFF	397	301	131	---				
meABL	129	079	012	652	---			
meLUC	-182	-213	-158	-150	243	---		
meTEA	-111	-187	-272	-081	273	565	---	
meUNK	-179	-231	-250	-056	137	222	147	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*797	743	767	814	402	896	368	149	-148	-104	-182
agEFF	620	*874	832	862	634		288	067	-236	-245	-213
agABL	606	688	*783	907	518		305	088	-216	-125	-220
agLUC	635	705	702	*765	590		180	088	-109	-093	-222
agTEA	299	494	382	430	*694	671	111	012	-133	-269	-252
agEAL	693	887	899	895	484	*752	301	094	-219	-179	-253
meEFF	270	221	221	129	076	214	*674	673	-146	-077	-051
meABL	106	050	062	061	008	065	442	*639	266	284	145
meLUC	-116	-193	-167	-084	-097	-166	-105	186	*768	576	224
meTEA	-079	-193	-093	-068	-189	-131	-053	192	425	*710	137
meUNK	-144	-177	-173	-172	-186	-195	-037	103	174	103	*788
Mean	2.897	3.096	2.839	2.761	2.909	2.898	2.723	2.453	1.860	1.839	2.243
Std	592	446	498	455	472	417	434	424	462	441	472

Table 14

Relations among the CAMI constructs for West Berlin 1993 (n = 516)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	817	---								
agABL	793	927	---							
agLUC	798	841	847	---						
agTEA	507	656	635	568	---					
meEFF	398	240	277	221	178	---				
meABL	214	037	234	214	-104	642	---			
meLUC	-093	-259	-185	-019	-261	083	448	---		
meTEA	-041	-134	-126	028	-387	140	430	651	---	
meUNK	-126	-368	-208	-283	-338	148	226	380	222	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	858	---						
agTEA	507	667	---					
meEFF	399	265	179	---				
meABL	213	163	-104	646	---			
meLUC	-095	-182	-263	082	448	---		
meTEA	-043	-097	-388	139	428	651	---	
meUNK	-124	-311	-336	149	228	377	221	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-858	---						
agTEA	507	665	---					
meEFF	399	262	179	---				
meABL	214	163	-104	646	---			
meLUC	-095	-176	-263	082	448	---		
meTEA	-043	-090	-387	139	428	651	---	
meUNK	-125	-312	-336	149	228	378	221	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*759	757	762	804	502	893	393	237	-083	-014	-157
agEFF	613	*863	860	789	636		232	038	-265	-120	-352
agABL	589	709	*787	825	632		280	215	-193	-123	-214
agLUC	633	663	661	*817	571		229	209	-037	034	-294
agTEA	386	522	495	456	*781	706	201	-094	-289	-389	-333
agEAL	691	886	893	879	553	*788	284	179	-187	-078	-330
meEFF	271	171	197	164	141	200	*628	666	050	123	104
meABL	166	028	153	152	-067	128	424	*644	416	409	203
meLUC	-063	-214	-148	-029	-222	-144	035	290	*754	654	360
meTEA	-011	-098	-096	027	-303	-061	086	289	501	*778	200
meUNK	-114	-271	-157	-220	-244	-243	068	135	259	147	*687
Mean	2.859	3.116	2.847	2.728	3.037	2.897	2.658	2.389	1.830	1.854	2.149
Std	627	463	494	504	533	432	417	403	491	518	437

Table 15

Relations among the CAMI constructs for Moscow 1990 (n = 551)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	872	---								
agABL	788	780	---							
agLUC	757	754	869	---						
agTEA	532	554	582	563	---					
meEFF	214	221	068	-011	163	---				
meABL	-024	-151	-117	-090	-207	591	---			
meLUC	-105	-296	-270	-285	-339	073	633	---		
meTEA	-145	-263	-299	-267	-423	121	638	782	---	
meUNK	-131	-253	-222	-256	-365	249	438	514	461	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	898	---						
agTEA	533	645	---					
meEFF	212	108	163	---				
meABL	-025	-130	-207	589	---			
meLUC	-105	-323	-339	074	633	---		
meTEA	-144	-309	-424	120	638	782	---	
meUNK	-132	-273	-365	249	436	514	461	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-889	---						
agTEA	533	632	---					
meEFF	212	092	163	---				
meABL	-025	-130	-207	589	---			
meLUC	-105	-314	-339	074	633	---		
meTEA	-143	-309	-424	120	638	782	---	
meUNK	-133	-269	-365	249	436	514	461	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*766	770	746	701	476	906	195	013	-098	-169	-112
agEFF	610	*819	745	718	518		198	-114	-284	-267	-243
agABL	554	573	*722	885	570		060	-108	-283	-325	-246
agLUC	538	570	659	*769	543		001	-057	-295	-274	-254
agTEA	314	353	365	359	*569	667	167	-181	-339	-392	-370
agEAL	661	826	875	869	419	*695	105	-114	-352	-354	-304
meEFF	142	149	042	001	105	073	*693	646	065	119	255
meABL	009	-081	-072	-039	-107	-075	422	*615	628	654	450
meLUC	-075	-227	-212	-228	-225	-259	048	434	*777	794	509
meTEA	-128	-209	-238	-208	-256	-255	085	443	605	*747	448
meUNK	-083	-187	-178	-190	-238	-215	181	300	382	330	*725
Mean	3.012	3.048	2.975	2.769	2.768	2.931	2.731	2.175	1.810	1.915	2.276
Std	566	449	490	472	436	403	493	541	552	562	562

Table 16

Relations among the CAMI constructs for Moscow 1992 (n = 358)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	877	---								
agABL	749	789	---							
agLUC	792	843	844	---						
agTEA	555	745	644	709	---					
meEFF	161	172	142	076	308	---				
meABL	-143	-139	-111	-190	-254	383	---			
meLUC	-190	-444	-302	-334	-441	-200	542	---		
meTEA	-258	-460	-290	-345	-499	-143	496	780	---	
meUNK	-168	-336	-247	-250	-216	-138	314	521	386	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	901	---						
agTEA	554	787	---					
meEFF	161	159	308	---				
meABL	-144	-164	-255	383	---			
meLUC	-190	-415	-441	-200	543	---		
meTEA	-257	-430	-500	-143	497	781	---	
meUNK	-167	-319	-216	-138	314	521	385	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-895	---						
agTEA	554	774	---					
meEFF	161	147	308	---				
meABL	-144	-162	-255	383	---			
meLUC	-190	-410	-440	-200	543	---		
meTEA	-257	-418	-500	-144	496	781	---	
meUNK	-167	-314	-216	-138	314	521	385	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*757	806	703	748	519	933	167	-089	-183	-210	-188
agEFF	642	*839	738	813	735		175	-117	-430	-421	-337
agABL	543	600	*789	815	602		157	-081	-298	-275	-241
agLUC	577	660	642	*786	698		080	-175	-336	-343	-249
agTEA	347	517	411	475	*590	841	338	-287	-431	-459	-207
agEAL	676	866	857	885	538	*693	170	-154	-440	-430	-342
meEFF	117	129	112	057	208	114	*645	454	-200	-096	-121
meABL	-064	-089	-059	-128	-183	-106	302	*686	491	466	280
meLUC	-144	-357	-240	-270	-300	-332	-145	369	*822	784	531
meTEA	-153	-322	-204	-254	-295	-300	-064	323	595	*699	381
meUNK	-150	-283	-196	-202	-146	-261	-089	212	441	291	*838
Mean	3.074	3.111	3.007	2.851	2.871	2.990	2.786	2.195	1.726	1.814	2.131
Std	574	484	479	497	447	423	495	509	518	486	610

Table 17

Relations among the CAMI constructs for Moscow 1994 (n = 435)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	755	---								
agABL	683	687	---							
agLUC	668	682	828	---						
agTEA	474	661	567	699	---					
meEFF	364	332	138	237	207	---				
meABL	102	-143	-094	-012	-022	554	---			
meLUC	-237	-494	-410	-401	-387	-146	560	---		
meTEA	-154	-395	-315	-327	-379	-107	581	847	---	
meUNK	-159	-385	-317	-311	-232	-277	231	567	568	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	829	---						
agTEA	472	768	---					
meEFF	365	276	205	---				
meABL	103	-101	-021	556	---			
meLUC	-238	-521	-386	-145	558	---		
meTEA	-155	-416	-378	-106	580	847	---	
meUNK	-161	-395	-231	-275	231	567	569	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-825	---						
agTEA	474	754	---					
meEFF	365	281	206	---				
meABL	103	-097	-022	556	---			
meLUC	-238	-511	-387	-145	558	---		
meTEA	-155	-406	-380	-106	580	847	---	
meUNK	-161	-397	-232	-276	230	567	568	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*747	709	647	660	461	831	345	097	-235	-153	-183
agEFF	544	*788	650	683	659		308	-126	-497	-388	-391
agABL	493	508	*776	816	552		083	-078	-411	-326	-299
agLUC	494	526	624	*752	705		215	006	-406	-332	-301
agTEA	327	480	399	502	*673	789	207	-025	-375	-367	-217
agEAL	609	809	850	854	549	*720	249	-082	-542	-431	-408
meEFF	236	216	058	148	134	167	*626	669	-129	-083	-226
meABL	064	-085	-052	004	-016	-053	405	*588	510	513	200
meLUC	-184	-399	-328	-319	-279	-416	-093	354	*820	847	582
meTEA	-114	-298	-248	-249	-261	-316	-057	340	664	*749	584
meUNK	-136	-297	-226	-224	-152	-297	-153	131	451	433	*734
Mean	3.073	3.146	3.043	2.844	2.971	3.011	2.842	2.327	1.714	1.808	2.139
Std	587	482	488	477	479	404	502	566	582	555	635

Table 18

Relations among the CAMI constructs for Los Angeles 1992 (n = 657)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	649	---								
agABL	707	860	---							
agLUC	600	841	956	---						
agTEA	428	710	570	654	---					
meEFF	498	212	172	181	175	---				
meABL	087	-108	-077	-111	-095	573	---			
meLUC	-067	-298	-229	-280	-302	189	622	---		
meTEA	-033	-378	-164	-247	-488	204	655	660	---	
meUNK	-123	-408	-401	-333	-252	185	335	444	376	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	695	---						
agTEA	425	687	---					
meEFF	497	193	173	---				
meABL	087	-102	-095	574	---			
meLUC	-067	-290	-301	190	621	---		
meTEA	-032	-275	-486	204	653	659	---	
meUNK	-124	-406	-252	186	335	443	374	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-695	---						
agTEA	425	680	---					
meEFF	497	200	173	---				
meABL	087	-104	-095	574	---			
meLUC	-067	-284	-300	190	621	---		
meTEA	-032	-277	-485	204	653	659	---	
meUNK	-124	-403	-252	187	335	443	374	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*699	609	677	613	486	745	477	098	-068	-048	-118
agEFF	463	*829	756	785	730		191	-112	-281	-371	-382
agABL	483	587	*728	942	578		140	-065	-234	-172	-407
agLUC	427	595	669	*694	711		158	-082	-268	-250	-329
agTEA	338	553	411	493	*693	793	169	-104	-333	-495	-253
agEAL	529	834	874	881	561	*722	192	-102	-307	-312	-439
meEFF	324	141	098	107	115	133	*663	569	181	196	175
meABL	064	-080	-044	-054	-068	-068	363	*614	629	689	345
meLUC	-050	-224	-175	-195	-243	-229	129	432	*768	669	440
meTEA	-034	-284	-124	-175	-347	-223	134	454	493	*707	389
meUNK	-084	-297	-297	-235	-180	-319	122	232	330	280	*732
Mean	3.286	3.136	2.946	2.873	2.901	2.985	2.870	2.239	1.861	1.838	2.165
Std	632	525	560	577	602	479	487	537	601	572	588

Table 19

Relations among the CAMI constructs for Tokyo 1993 (n = 816)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	625	---								
agABL	695	669	---							
agLUC	-031	-313	-281	---						
agTEA	187	579	319	-281	---					
meEFF	337	339	190	-053	179	---				
meABL	077	-114	-168	395	-141	423	---			
meLUC	081	-227	-182	760	-222	-161	289	---		
meTEA	045	-337	-271	509	-507	-157	219	571	---	
meUNK	-029	-119	-185	281	-002	-043	129	264	102	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	765	---						
agTEA	186	603	---					
meEFF	338	321	178	---				
meABL	074	-257	-140	423	---			
meLUC	076	-408	-219	-159	284	---		
meTEA	045	-471	-505	-157	219	562	---	
meUNK	-029	-231	-002	-043	128	262	102	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-747	---						
agTEA	186	585	---					
meEFF	338	319	178	---				
meABL	074	-261	-139	423	---			
meLUC	077	-423	-219	-159	284	---		
meTEA	045	-477	-505	-157	219	562	---	
meUNK	-029	-242	-002	-043	128	262	102	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*765		662	052	194	734	308	111	103	056	-029
agEFF	440	*118		-692			824	-300	-574	-868	-314
agABL	505	506	*759	-229	358		174	-192	-185	-279	-192
agLUC	039	-205	-172	*746	-318	498	-027	420	820	527	281
agTEA	146	471	268	-237	*742	367	184	-172	-225	-568	-006
agEAL	543	702	738	364	268	*717	264	068	246	-043	-016
meEFF	232	243	130	-020	136	192	*738	423	-158	-154	-039
meABL	082	-086	-141	304	-124	048	305	*704	313	238	143
meLUC	084	-183	-149	656	-180	193	-126	243	*856	601	273
meTEA	044	-269	-219	410	-440	-033	-119	180	500	*809	111
meUNK	-024	-101	-157	227	-005	-013	-032	113	237	093	*878
Mean	2.388	3.029	2.602	1.989	2.871	2.540	3.140	2.491	1.636	1.345	2.603
Std	625	494	527	530	559	309	476	546	562	446	697

Table 20

Relations among the CAMI constructs for Prague 1991 (n = 799)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	648	---								
agABL	578	771	---							
agLUC	607	780	931	---						
agTEA	336	534	648	561	---					
meEFF	408	254	048	128	127	---				
meABL	095	-009	-059	000	-121	510	---			
meLUC	-067	-349	-143	-148	-109	-076	342	---		
meTEA	-079	-369	-189	-156	-235	-042	412	649	---	
meUNK	-023	-336	-266	-226	-255	025	334	485	476	

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	669	---						
agTEA	334	639	---					
meEFF	406	144	123	---				
meABL	093	-037	-122	512	---			
meLUC	-067	-227	-110	-074	342	---		
meTEA	-079	-261	-235	-041	412	648	---	
meUNK	-023	-296	-256	029	333	485	476	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-668	---						
agTEA	334	634	---					
meEFF	406	151	123	---				
meABL	093	-027	-122	512	---			
meLUC	-067	-229	-110	-074	342	---		
meTEA	-079	-257	-235	-041	412	648	---	
meUNK	-023	-302	-256	030	334	485	476	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*663	629	545	603	352	735	393	101	-070	-078	-027
agEFF	458	*798	695	745	522		235	-012	-346	-356	-327
agABL	384	537	*750	877	627		038	-081	-130	-190	-256
agLUC	402	545	622	*670	559		107	-010	-145	-160	-230
agTEA	201	327	381	321	*492	703	144	-120	-090	-208	-260
agEAL	493	833	849	849	406	*678	162	-042	-264	-299	-339
meEFF	271	178	028	074	085	113	*717	498	-078	-044	022
meABL	066	-008	-057	-007	-068	-028	340	*648	378	431	367
meLUC	-053	-285	-103	-110	-058	-200	-061	280	*848	670	493
meTEA	-056	-281	-145	-116	-129	-218	-033	306	545	*781	473
meUNK	-018	-240	-182	-155	-150	-230	016	243	374	344	*677
Mean	2.933	3.136	2.764	2.715	2.720	2.872	2.965	2.569	1.787	1.936	2.251
Std	536	453	423	414	371	362	453	483	547	507	479

Table 21

Relations among the CAMI constructs for Warsaw 1991 (n = 190)

10 1st-Order Factors: MACS model estimates

	Cntrl	agEFF	agABL	agLUC	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---									
agEFF	938	---								
agABL	735	880	---							
agLUC	803	816	870	---						
agTEA	560	853	675	615	---					
meEFF	350	118	-003	192	035	---				
meABL	163	-004	-020	007	-138	860	---			
meLUC	-117	-349	-123	-151	-393	064	260	---		
meTEA	-074	-269	-049	-031	-402	119	260	667	---	
meUNK	-169	-238	-199	-380	-400	-078	092	526	442	---

8 1st-Order Factors (agEAL): MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	906	---						
agTEA	559	807	---					
meEFF	346	109	030	---				
meABL	163	001	-138	857	---			
meLUC	-118	-267	-394	073	259	---		
meTEA	-074	-176	-402	122	260	667	---	
meUNK	-170	-304	-400	-074	091	523	442	---

2nd-Order agEAL: MACS model estimates

	Cntrl	agEAL	agTEA	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	---							
agEAL	-901	---						
agTEA	565	795	---					
meEFF	347	107	032	---				
meABL	166	-008	-137	857	---			
meLUC	-119	-245	-393	073	259	---		
meTEA	-078	-146	-403	122	260	667	---	
meUNK	-173	-295	-399	-075	091	523	442	---

Raw and Raw-Corrected Correlations, Reliabilities, and Moments

	Cntrl	agEFF	agABL	agLUC	agTEA	agEAL	meEFF	meABL	meLUC	meTEA	meUNK
Cntrl	*707	710	558	643	420	823	325	180	-044	-064	-168
agEFF	539	*815	805	757	760		119	-007	-300	-247	-226
agABL	395	611	*708	864	624		-011	-014	-122	-100	-250
agLUC	450	568	605	*691	608		216	047	-140	-070	-407
agTEA	253	491	376	362	*513	859	026	-108	-382	-402	-337
agEAL	537	843	871	848	478	*602	137	010	-242	-180	-379
meEFF	226	089	-008	149	015	088	*688	848	039	154	-124
meABL	121	-005	-009	031	-062	006	560	*634	298	297	128
meLUC	-032	-238	-090	-103	-240	-165	028	208	*773	697	504
meTEA	-045	-187	-070	-049	-242	-117	107	198	514	*704	445
meUNK	-120	-174	-180	-289	-206	-250	-088	087	378	318	*726
Mean	2.973	3.042	2.942	2.876	2.902	2.953	2.762	2.565	1.983	2.053	2.261
Std	533	406	446	426	403	364	404	451	504	489	501

Appendix B:

Raw Correlations with Academic Performance and Raven.

Overview of Differences Between Schools in the Various Socio-Cultural Contexts

Table 22

Raw Correlations with Academic Performance and Raven: East Berlin 1990

CAMI Construct	P	Academic Performance						Raven					
		2	3	4	5	6	Tot	2	3	4	5	6	Tot
							Control Expectancy						
		.56	.51	.36	.38	.70	.49	.	.	.	.	.	.
	G	.55	.51	.36	.36	.68	.48	.	.	.	.	.	.
	R	.55	.51	.36	.36	.68	.48						
							Agency Beliefs						
Effort		.71	.68	.46	.55	.72	.62	.	.	.	.	.	.
	G	.70	.66	.46	.55	.72	.61	.	.	.	.	.	.
	R	.70	.66	.46	.55	.72	.61						
Ability		.59	.58	.57	.62	.79	.62	.	.	.	.	.	.
	G	.58	.56	.58	.65	.79	.63	.	.	.	.	.	.
	R	.58	.56	.58	.65	.79	.63						
Luck		.71	.59	.57	.57	.76	.61	.	.	.	.	.	.
	G	.71	.57	.57	.55	.75	.62	.	.	.	.	.	.
	R	.71	.57	.57	.55	.75	.62						
Teacher		.43	.45	.22	.28	.58	.38	.	.	.	.	.	.
	G	.42	.42	.22	.24	.55	.36	.	.	.	.	.	.
	R	.42	.42	.22	.24	.55	.36						
							Means Ends Beliefs						
Effort		.22	.37	.02	.16	.17	.18	.	.	.	.	.	.
	G	.23	.39	.02	.16	.15	.20	.	.	.	.	.	.
	R	.23	.39	.02	.16	.15	.20						
Ability		.30	.20	.24	.06	.05	.17	.	.	.	.	.	.
	G	.29	.25	.24	.05	.03	.18	.	.	.	.	.	.
	R	.29	.25	.24	.05	.03	.18						
Luck		-.14	-.22	-.22	-.12	-.31	-.19	.	.	.	.	.	.
	G	-.14	-.20	-.22	-.16	-.29	-.21	.	.	.	.	.	.
	R	-.14	-.20	-.22	-.16	-.29	-.21						
Teacher		-.21	-.13	-.02	-.10	-.10	-.11	.	.	.	.	.	.
	G	-.22	-.12	-.01	-.03	-.13	-.11	.	.	.	.	.	.
	R	-.22	-.12	-.01	-.03	-.13	-.11						
Unknown		.00	-.15	-.05	-.01	-.04	-.05	.	.	.	.	.	.
	G	.02	-.13	-.05	-.04	.01	-.05	.	.	.	.	.	.
	R	.02	-.13	-.05	-.04	.01	-.05						

Note. *P* is what has been partialed. *G* = the effects of Gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 23

Raw Correlations with Academic Performance and Raven: East Berlin 1991

CAMI Construct	P	Academic Performance 2	3	4	5	6	Tot	Raven 2	3	4	5	6	Tot
Control Expectancy													
		.42	.59	.53	.50	.43	.47	.20	.31	.29	.31	.17	.16
	G	.44	.57	.52	.50	.43	.47	.20	.32	.29	.31	.17	.24
	R	.40	.49	.47	.41	.41	.42						
Agency Beliefs													
Effort		.43	.73	.50	.67	.71	.58	.28	.39	.37	.38	.40	.22
	G	.42	.72	.51	.67	.70	.58	.28	.40	.37	.38	.39	.34
	R	.36	.66	.41	.60	.63	.51						
Ability		.48	.74	.72	.67	.79	.63	.29	.36	.52	.41	.41	.18
	G	.48	.72	.71	.70	.80	.65	.29	.37	.52	.41	.41	.35
	R	.42	.66	.62	.62	.75	.58						
Luck		.33	.69	.46	.66	.65	.50	.21	.48	.33	.44	.32	.05
	G	.32	.68	.47	.67	.65	.54	.21	.48	.33	.44	.32	.33
	R	.28	.59	.37	.57	.60	.45						
Teacher		.33	.58	.26	.41	.43	.39	.13	.19	.14	.20	.25	.03
	G	.33	.59	.25	.42	.41	.39	.12	.19	.13	.20	.25	.17
	R	.30	.56	.22	.38	.34	.35						
Means Ends Beliefs													
Effort		.14	.26	.31	.36	.04	.20	.04	.24	.39	.32	-.03	.20
	G	.14	.26	.31	.38	.09	.22	.04	.24	.39	.31	.00	.15
	R	.13	.18	.21	.24	.09	.18						
Ability		-.01	.28	.28	.18	.09	.11	-.01	.17	.44	.22	.12	.06
	G	-.03	.26	.31	.21	.10	.13	-.01	.17	.45	.21	.12	.11
	R	-.02	.20	.14	.09	.03	.07						
Luck		-.15	-.18	-.33	-.25	.18	-.12	-.12	-.20	-.22	-.34	.07	-.34
	G	-.17	-.19	-.38	-.28	.15	-.16	-.12	-.20	-.23	-.34	.05	-.16
	R	-.15	-.13	-.35	-.07	.15	-.10						
Teacher		-.11	-.12	-.28	-.22	.02	-.12	-.07	-.08	-.04	-.13	.10	-.14
	G	-.09	-.14	-.37	-.22	.04	-.11	-.07	-.08	-.05	-.14	.11	-.05
	R	-.07	-.11	-.40	-.15	-.02	-.11						
Unknown		-.21	-.22	-.15	.01	-.09	-.14	-.13	-.10	-.46	-.07	.18	-.08
	G	-.19	-.22	-.27	.00	-.13	-.15	-.13	-.10	-.49	-.06	.17	-.11
	R	-.17	-.18	-.06	.08	-.24	-.11						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 24

Raw Correlations with Academic Performance and Raven: East Berlin 1992

CAMI Construct	P	Academic Performance						Raven					
		2	3	4	5	6	Tot	2	3	4	5	6	Tot
Control Expectancy													
		.28	.30	.53	.39	.53	.39	.18	.13	.39	.19	.21	.19
	G	.27	.29	.47	.36	.55	.38	.19	.13	.36	.22	.20	.20
	R	.19	.24	.38	.31	.53	.33						
Agency Beliefs													
Effort		.39	.46	.63	.40	.58	.48	.27	.24	.30	.33	.20	.25
	G	.38	.45	.62	.38	.59	.47	.28	.24	.28	.35	.19	.26
	R	.30	.38	.57	.27	.59	.41						
Ability		.43	.44	.66	.59	.68	.55	.25	.27	.40	.38	.37	.24
	G	.42	.43	.63	.59	.71	.55	.27	.27	.38	.39	.36	.32
	R	.35	.34	.56	.53	.65	.47						
Luck		.44	.45	.66	.51	.62	.52	.18	.26	.37	.42	.30	.14
	G	.43	.44	.60	.49	.63	.51	.19	.26	.34	.45	.29	.29
	R	.38	.36	.55	.39	.58	.44						
Teacher		.15	.29	.32	.17	.40	.26	.14	.18	.01	.08	.04	.06
	G	.12	.28	.23	.15	.41	.24	.16	.19	-.05	.09	.04	.11
	R	.03	.19	.28	.13	.49	.22						
Means Ends Beliefs													
Effort		.20	.31	.20	.16	.18	.21	.05	.05	.10	.14	.07	.15
	G	.18	.35	.19	.13	.20	.22	.06	.05	.10	.15	.06	.07
	R	.16	.36	.17	.08	.19	.21						
Ability		.12	-.02	-.17	-.04	-.02	-.01	.04	-.08	-.03	.06	.08	.01
	G	.14	-.01	-.24	-.02	-.01	-.01	.04	-.08	-.05	.06	.08	.01
	R	.12	.03	-.24	-.07	-.08	-.01						
Luck		.01	-.30	-.38	-.25	-.33	-.21	-.08	-.36	-.15	-.23	-.05	-.34
	G	.05	-.32	-.42	-.26	-.38	-.24	-.09	-.36	-.16	-.23	-.03	-.19
	R	.08	-.17	-.40	-.18	-.44	-.17						
Teacher		.07	-.20	-.16	-.06	-.12	-.09	.06	-.14	.02	-.08	-.14	-.08
	G	.11	-.20	-.18	-.08	-.13	-.09	.05	-.14	.02	-.08	-.14	-.05
	R	.09	-.15	-.20	-.04	-.07	-.07						
Unknown		-.12	.01	-.15	-.18	-.19	-.12	.07	-.09	-.12	-.10	.05	-.05
	G	-.10	.02	-.15	-.17	-.19	-.11	.06	-.09	-.12	-.10	.05	-.03
	R	-.15	.08	-.12	-.17	-.25	-.10						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 25

Raw Correlations with Academic Performance and Raven: West Berlin 1991

CAMI Construct	P	Academic Performance 2	3	4	5	6	Tot	Raven 2	3	4	5	6	Tot
Control Expectancy													
		.40	.36	.43	.39	.58	.41	.01	.18	.15	.03	.24	.07
	G	.41	.36	.43	.40	.60	.42	.02	.18	.15	.04	.25	.10
	R	.45	.32	.41	.43	.55	.41						
Agency Beliefs													
Effort		.40	.48	.58	.45	.67	.50	.01	.31	.27	.25	.24	.20
	G	.40	.48	.58	.46	.70	.50	.09	.31	.27	.25	.25	.22
	R	.40	.40	.53	.40	.67	.46						
Ability		.46	.49	.57	.57	.70	.55	.09	.32	.28	.37	.28	.20
	G	.47	.50	.57	.59	.74	.56	.09	.32	.28	.38	.30	.25
	R	.49	.41	.53	.51	.71	.51						
Luck		.45	.49	.63	.49	.54	.50	.06	.20	.25	.15	.11	.04
	G	.45	.49	.63	.48	.53	.51	.06	.20	.25	.15	.10	.15
	R	.48	.46	.60	.48	.54	.50						
Teacher		.30	.32	.27	.22	.38	.29	.08	.12	.00	.09	.04	.04
	G	.32	.32	.29	.22	.37	.29	.09	.12	.00	.08	.03	.07
	R	.31	.30	.32	.20	.38	.29						
Means Ends Beliefs													
Effort		.23	.25	.02	.00	.01	.12	-.01	.11	.19	.01	.15	.16
	G	.24	.25	.03	.01	.00	.12	-.01	.11	.19	.02	.14	.08
	R	.27	.22	-.06	-.03	-.05	.08						
Ability		.25	.24	.07	.03	.07	.15	.01	.01	.17	.10	.11	.01
	G	.25	.24	.07	.05	.08	.15	.01	.01	.17	.12	.11	.06
	R	.28	.28	.00	-.01	.06	.13						
Luck		-.08	-.07	-.17	-.20	-.21	-.13	-.12	-.13	-.24	-.04	-.32	-.31
	G	-.08	-.07	-.18	-.21	-.22	-.13	-.13	-.13	-.24	-.04	-.32	-.16
	R	-.03	-.01	-.08	-.23	-.10	-.07						
Teacher		-.17	.00	-.11	-.07	-.20	-.10	-.30	-.06	.05	-.08	-.10	-.17
	G	-.16	.00	-.13	-.06	-.24	-.11	-.29	-.05	.06	-.07	-.11	-.11
	R	-.05	.03	-.18	-.05	-.22	-.07						
Unknown		-.01	.03	-.05	-.07	.05	-.01	-.01	.00	.09	-.07	.05	.04
	G	-.01	.03	-.04	-.07	.02	-.01	-.01	.01	.09	-.08	.04	.01
	R	-.02	.03	-.09	-.03	-.01	-.03						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 26

Raw Correlations with Academic Performance and Raven: West Berlin 1992

CAMI Construct	*P*	Academic Performance 2	3	4	5	6	Tot	Raven 2	3	4	5	6	Tot
Control Expectancy													
		.42	.38	.51	.50	.38	.44	.22	.15	.14	.19	.22	.12
	G	.42	.39	.51	.51	.42	.45	.23	.18	.14	.19	.23	.19
	R	.37	.36	.51	.48	.36	.42						
Agency Beliefs													
Effort		.39	.44	.54	.58	.59	.51	.20	.28	.25	.17	.37	.17
	G	.39	.44	.53	.58	.60	.51	.21	.29	.24	.17	.37	.24
	R	.35	.35	.48	.58	.51	.46						
Ability		.45	.46	.62	.64	.66	.57	.27	.30	.34	.28	.46	.28
	G	.45	.45	.63	.66	.69	.58	.29	.29	.35	.27	.46	.32
	R	.38	.36	.56	.62	.59	.51						
Luck		.36	.47	.58	.66	.54	.52	.17	.21	.27	.29	.24	.08
	G	.36	.48	.58	.66	.55	.53	.17	.22	.27	.29	.24	.22
	R	.32	.44	.53	.61	.51	.49						
Teacher		.25	.28	.29	.29	.41	.30	.30	.21	.17	.14	.24	.16
	G	.25	.28	.28	.29	.39	.30	.31	.20	.16	.14	.24	.19
	R	.13	.21	.24	.25	.33	.24						
Means Ends Beliefs													
Effort		.11	.18	.18	.22	.30	.18	.30	.22	.11	.11	.12	.21
	G	.11	.15	.18	.22	.29	.18	.32	.18	.11	.11	.12	.16
	R	-.05	.06	.17	.22	.28	.12						
Ability		.14	.18	.18	.00	.21	.14	.20	.08	.14	.08	.13	.06
	G	.14	.18	.18	.01	.23	.15	.20	.07	.14	.07	.14	.12
	R	.05	.17	.12	.00	.20	.10						
Luck		-.13	-.21	-.12	-.28	-.06	-.15	.00	-.03	-.12	-.22	-.07	-.30
	G	-.13	-.22	-.13	-.28	-.05	-.16	-.01	-.04	-.12	-.22	-.07	-.09
	R	-.15	-.24	-.11	-.22	-.02	-.13						
Teacher		-.17	-.14	-.18	-.04	.24	-.07	-.02	-.13	-.01	-.05	.05	-.10
	G	-.17	-.13	-.17	-.06	.27	-.07	-.02	-.11	.00	-.03	.04	-.06
	R	-.18	-.08	-.23	-.06	.28	-.05						
Unknown		-.14	-.16	-.09	-.10	.14	-.09	-.20	-.02	.02	-.06	.01	-.10
	G	-.14	-.19	-.09	-.10	.14	-.09	-.21	-.07	.03	-.06	.01	-.05
	R	-.04	-.19	-.13	-.06	.14	-.08						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 27

Raw Correlations with Academic Performance and Raven: West Berlin 1993

CAMI Construct	P	Academic Performance 2	3	4	5	6	Tot	Raven 2	3	4	5	6	Tot
							Control Expectancy						
		.33	.53	.53	.53	.31	.43	.	.	.	.	.	.
	G	.33	.54	.55	.53	.32	.44	.	.	.	.	.	.
	R	.33	.54	.55	.53	.32	.44						
							Agency Beliefs						
Effort		.45	.56	.51	.54	.43	.49	.	.	.	.	.	.
	G	.45	.57	.52	.55	.44	.50	.	.	.	.	.	.
	R	.45	.57	.52	.55	.44	.50						
Ability		.47	.48	.54	.62	.55	.53	.	.	.	.	.	.
	G	.47	.48	.57	.65	.56	.55	.	.	.	.	.	.
	R	.47	.48	.57	.65	.56	.55						
Luck		.56	.50	.55	.51	.47	.51	.	.	.	.	.	.
	G	.56	.50	.54	.52	.47	.52	.	.	.	.	.	.
	R	.56	.50	.54	.52	.47	.52						
Teacher		.40	.39	.32	.33	.12	.31	.	.	.	.	.	.
	G	.39	.39	.31	.32	.12	.31	.	.	.	.	.	.
	R	.39	.39	.31	.32	.12	.31						
							Means Ends Beliefs						
Effort		.17	.18	.44	.26	.12	.23	.	.	.	.	.	.
	G	.17	.18	.42	.27	.14	.23	.	.	.	.	.	.
	R	.17	.18	.42	.27	.14	.23						
Ability		.16	.07	.34	.07	.22	.17	.	.	.	.	.	.
	G	.16	.07	.32	.07	.23	.18	.	.	.	.	.	.
	R	.16	.07	.32	.07	.23	.18						
Luck		-.10	-.10	-.28	-.24	.01	-.12	.	.	.	.	.	.
	G	-.10	-.11	-.32	-.24	.00	-.13	.	.	.	.	.	.
	R	-.10	-.11	-.32	-.24	.00	-.13						
Teacher		-.06	-.15	-.06	.05	.17	.01	.	.	.	.	.	.
	G	-.06	-.16	-.09	.06	.16	.00	.	.	.	.	.	.
	R	-.06	-.16	-.09	.06	.16	.00						
Unknown		-.27	-.11	.00	-.05	.14	-.09	.	.	.	.	.	.
	G	-.27	-.12	.04	-.05	.14	-.09	.	.	.	.	.	.
	R	-.27	-.12	.04	-.05	.14	-.09						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 28

Raw Correlations with Academic Performance and Raven: Moscow 1990

CAMI Construct	P	Academic Performance 2	3	4	5	6	Tot	Raven 2	3	4	5	6	Tot
Control Expectancy													
		.33	.07	.43	.28	.49	.31	.03	.02	.17	.29	.18	.04
	G	.30	.06	.36	.25	.47.	.27	-.03	.01	.08	.28	.17	.10
	R	.34	.07	.36	.13	.45	.26						
Agency Beliefs													
Effort		.49	.25	.49	.38	.37	.39	.27	.11	.25	.27	.24	.17
	G	.46	.22	.44	.31	.37	.35	.21	.09	.18	.25	.24	.19
	R	.43	.21	.41	.21	.32	.30						
Ability		.53	.26	.49	.44	.42	.42	.16	.18	.25	.33	.22	.23
	G	.51	.25	.44	.42	.43	.40	.10	.18	.19	.32	.22	.21
	R	.53	.22	.40	.32	.39	.36						
Luck		.58	.31	.48	.27	.57	.43	.26	.13	.23	.20	.18	.07
	G	.56	.29	.44	.24	.58	.41	.20	.12	.17	.19	.18	.17
	R	.54	.27	.41	.18	.57	.38						
Teacher		.28	.17	.28	.22	.14	.21	.30	.11	.15	.14	-.05	.04
	G	.25	.15	.28	.20	.13	.19	.26	.10	.14	.13	-.05	.11
	R	.17	.14	.25	.16	.16	.16						
Means Ends Beliefs													
Effort		.01	.26	.13	.02	.15	.12	.04	.21	.13	.24	.03	.15
	G	.02	.24	.13	.09	.19	.13	.05	.19	.13	.27	.04	.14
	R	.00	.18	.09	-.04	.19	.09						
Ability		-.20	.07	.13	-.20	.13	.00	-.17	.03	.13	.02	.11	-.04
	G	-.20	.07	.13	-.17	.21	.02	-.18	.03	.13	.04	.13	.04
	R	-.14	.06	.09	-.20	.18	.01						
Luck		-.25	-.03	.05	-.16	-.15	-.09	-.33	-.21	-.03	-.10	.10	-.28
	G	-.22	-.04	.00	-.24	-.16	-.11	-.30	-.22	-.07	-.13	.10	-.14
	R	-.11	.04	.03	-.19	-.21	-.06						
Teacher		-.29	-.05	-.01	-.11	-.20	-.12	-.24	-.15	.02	.01	.14	-.10
	G	-.28	-.04	-.07	-.11	-.15	-.12	-.22	-.15	-.03	.01	.16	-.05
	R	-.21	.01	-.06	-.14	-.22	-.11						
Unknown		-.24	-.03	-.02	-.10	-.09	-.09	-.21	-.13	.04	.03	-.02	-.16
	G	-.19	-.03	-.04	-.13	-.07	-.08	-.14	-.13	.01	.02	-.02	-.06
	R	-.15	.01	-.05	-.15	-.07	-.06						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 29

Raw Correlations with Academic Performance and Raven: Moscow 1992

CAMI Construct	P	Academic Performance 2	3	4	5	6	Tot	Raven 2	3	4	5	6	Tot
							Control Expectancy						
		.20	.14	-.07	.28	.24	.20	.	.	.	.	.	.
	G	.15	.13	-.11	.25	.22	.16	.	.	.	.	.	.
	R	.15	.13	-.11	.25	.22	.16						
							Agency Beliefs						
Effort		.39	.32	.24	.36	.38	.36	.	.	.	.	.	.
	G	.36	.30	.21	.31	.36	.32	.	.	.	.	.	.
	R	.36	.30	.21	.31	.36	.32						
Ability		.41	.29	.57	.49	.43	.41	.	.	.	.	.	.
	G	.40	.27	.56	.49	.41	.40	.	.	.	.	.	.
	R	.40	.27	.56	.49	.41	.40						
Luck		.37	.34	.47	.54	.43	.40	.	.	.	.	.	.
	G	.35	.35	.46	.54	.41	.39	.	.	.	.	.	.
	R	.35	.35	.46	.54	.41	.39						
Teacher		.39	.21	.31	.22	.25	.28	.	.	.	.	.	.
	G	.34	.19	.30	.22	.23	.26	.	.	.	.	.	.
	R	.34	.19	.30	.22	.23	.26						
							Means Ends Beliefs						
Effort		.15	.28	.06	-.07	.01	.10	.	.	.	.	.	.
	G	.15	.29	.07	-.02	.00	.11	.	.	.	.	.	.
	R	.15	.29	.07	-.02	.00	.11						
Ability		-.03	.16	-.17	.05	.06	.04	.	.	.	.	.	.
	G	-.01	.19	-.16	.07	.09	.06	.	.	.	.	.	.
	R	-.01	.19	-.16	.07	.09	.06						
Luck		-.36	-.07	-.45	-.12	-.03	-.19	.	.	.	.	.	.
	G	-.36	-.07	-.47	-.12	-.02	-.19	.	.	.	.	.	.
	R	-.36	-.07	-.47	-.12	-.02	-.19						
Teacher		-.25	-.08	-.34	-.31	.03	-.17	.	.	.	.	.	.
	G	-.27	-.10	-.32	-.28	.07	-.17	.	.	.	.	.	.
	R	-.27	-.10	-.32	-.28	.07	-.17						
Unknown		-.16	.05	-.21	-.10	.05	-.06	.	.	.	.	.	.
	G	-.14	.06	-.25	-.16	.07	-.06	.	.	.	.	.	.
	R	-.14	.06	-.25	-.16	.07	-.06						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 30

Raw Correlations with Academic Performance and Raven: Moscow 1994

CAMI Construct	*P*	Academic Performance 2	3	4	5	6	Tot	Raven 2	3	4	5	6	Tot
Control Expectancy													
		.41	.39	.26	.29	.16	.29	.	.	.	.	.	.
	G	.41	.42	.25	.26	.18	.28	.	.	.	.	.	.
	R	.41	.42	.25	.26	.18	.28						
Agency Beliefs													
Effort		.39	.38	.31	.40	.22	.35	.	.	.	.	.	.
	G	.40	.35	.31	.37	.22	.32	.	.	.	.	.	.
	R	.40	.35	.31	.37	.22	.32						
Ability		.47	.30	.28	.52	.20	.38	.	.	.	.	.	.
	G	.46	.39	.27	.50	.26	.37	.	.	.	.	.	.
	R	.46	.39	.27	.50	.26	.37						
Luck		.44	.41	.32	.51	.35	.41	.	.	.	.	.	.
	G	.41	.42	.31	.49	.31	.39	.	.	.	.	.	.
	R	.41	.42	.31	.49	.31	.39						
Teacher		.22	.45	.18	.35	.39	.31	.	.	.	.	.	.
	G	.21	.43	.17	.32	.34	.28	.	.	.	.	.	.
	R	.21	.43	.17	.32	.34	.28						
Means Ends Beliefs													
Effort		.03	-.03	.11	.04	.24	.06	.	.	.	.	.	.
	G	.04	.01	.10	.04	.24	.06	.	.	.	.	.	.
	R	.04	.01	.10	.04	.24	.06						
Ability		.04	-.14	.08	-.06	.41	.02	.	.	.	.	.	.
	G	.02	-.03	.09	.00	.40	.06	.	.	.	.	.	.
	R	.02	-.03	.09	.00	.40	.06						
Luck		-.24	-.39	-.07	-.37	.14	-.24	.	.	.	.	.	.
	G	-.27	-.36	-.07	-.36	.19	-.22	.	.	.	.	.	.
	R	-.27	-.36	-.07	-.36	.19	-.22						
Teacher		-.16	-.19	-.02	-.20	.00	-.13	.	.	.	.	.	.
	G	-.16	-.21	-.02	-.17	.09	-.11	.	.	.	.	.	.
	R	-.16	-.21	-.02	-.17	.09	-.11						
Unknown		-.26	-.16	-.02	-.18	.09	-.12	.	.	.	.	.	.
	G	-.26	-.14	-.01	-.17	.08	-.11	.	.	.	.	.	.
	R	-.26	-.14	-.01	-.17	.08	-.11						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 31

Raw Correlations with Academic Performance and Raven: Los Angeles 1992

CAMI Construct	P	Academic Performance 2	3	4	5	6	Tot	Raven 2	3	4	5	6	Tot
Control Expectancy													
		.16	.28	.05	.27	.09	.16	.14	-.05	.17	.19	.07	.10
	G	.17	.26	.04	.25	.05	.16	.14	-.04	.17	.19	.05	.11
	R	.12	.30	-.01	.22	.04	.14						
Agency Beliefs													
Effort		.23	.31	.37	.38	.13	.28	.12	.03	.03	-.01	.01	.01
	G	.22	.28	.35	.31	.14	.27	.10	.04	.04	-.02	.02	.04
	R	.19	.27	.33	.31	.12	.26						
Ability		.21	.29	.34	.39	.13	.27	.13	.05	.14	.11	-.01	.02
	G	.20	.28	.36	.39	.14	.27	.11	.06	.13	.11	-.01	.08
	R	.17	.27	.33	.38	.12	.25						
Luck		.28	.30	.49	.40	.10	.32	.13	.02	.19	-.04	-.01	-.03
	G	.27	.27	.48	.37	.12	.32	.12	.03	.20	-.04	-.01	.05
	R	.26	.27	.45	.38	.10	.30						
Teacher		.31	.25	.33	.03	-.02	.18	.20	.09	.06	.09	-.05	.05
	G	.31	.25	.32	-.01	-.02	.18	.20	.09	.07	.09	-.05	.08
	R	.26	.23	.27	-.04	-.03	.14						
Means Ends Beliefs													
Effort		.02	.05	.03	.09	.12	.05	.01	.01	.05	.16	.07	.15
	G	.03	.05	.03	.12	.12	.06	.03	.01	.05	.16	.07	.06
	R	.03	.06	-.01	.11	.12	.06						
Ability		-.08	-.08	.01	.13	.03	-.01	.01	-.06	.21	-.01	.09	.05
	G	-.06	-.09	.04	.15	.02	.00	.03	-.05	.21	-.01	.09	.04
	R	-.06	-.08	-.03	.19	.00	.00						
Luck		-.29	-.28	-.25	-.05	-.13	-.20	-.17	-.20	-.10	-.09	-.07	-.24
	G	-.28	-.30	-.25	-.06	-.14	-.21	-.15	-.20	-.10	-.09	-.07	-.12
	R	-.24	-.24	-.15	-.03	-.11	-.16						
Teacher		-.27	-.25	-.20	.03	-.01	-.15	-.16	-.17	-.03	-.06	.03	-.12
	G	-.26	-.23	-.19	.06	-.01	-.14	-.15	-.19	-.04	-.06	.03	-.08
	R	-.22	-.18	-.09	.08	-.01	-.10						
Unknown		-.18	-.29	-.11	-.12	-.03	-.15	-.11	-.19	-.07	-.04	-.09	-.15
	G	-.17	-.29	-.15	-.09	-.06	-.15	-.10	-.19	-.05	-.04	-.11	-.09
	R	-.13	-.22	-.11	-.07	-.05	-.11						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 32

Raw Correlations with Academic Performance and Raven: Tokyo 1993

CAMI Construct	P	Academic Performance						Raven					
		2	3	4	5	6	Tot	2	3	4	5	6	Tot
Control Expectancy													
		.12	.28	.28	.29	.38	.27	.04	.23	.12	.24	.17	.11
	G	.13	.26	.28	.31	.38	.27	.05	.22	.12	.24	.17	.15
	R	.12	.17	.26	.22	.36	.22						
Agency Beliefs													
Effort		.28	.31	.18	.27	.40	.28	.18	.23	.09	.17	.25	.16
	G	.25	.29	.17	.25	.40	.27	.16	.22	.08	.16	.25	.17
	R	.20	.21	.15	.21	.32	.21						
Ability		.36	.50	.24	.49	.55	.42	.22	.24	-.07	.37	.35	.16
	G	.40	.49	.30	.52	.56	.45	.24	.23	.11	.39	.33	.26
	R	.33	.45	.29	.38	.47	.37						
Luck		-.15	-.10	-.09	-.20	-.25	-.16	-.22	-.09	-.08	-.09	-.23	-.17
	G	-.16	-.10	-.13	-.26	-.25	-.18	-.22	-.09	-.12	-.12	-.20	-.15
	R	-.06	-.06	-.09	-.23	-.19	-.12						
Teacher		.08	.16	.04	.12	.11	.10	-.07	.15	-.01	.17	.11	.07
	G	.04	.13	.05	.11	.11	.09	-.11	.14	-.01	.16	.10	.06
	R	.11	.08	.05	.03	.05	.07						
Means Ends Beliefs													
Effort		.15	.15	.08	.11	.17	.12	.06	.22	.10	.14	.01	.22
	G	.15	.15	.10	.13	.17	.13	.06	.22	.12	.15	.03	.10
	R	.13	.04	.05	.07	.16	.09						
Ability		.16	-.12	-.20	-.26	-.21	-.14	.14	.03	-.13	-.13	-.17	.00
	G	.17	-.11	-.18	-.23	-.21	-.12	.14	.04	-.11	-.12	-.20	-.04
	R	.11	-.15	-.14	-.20	-.13	-.11						
Luck		-.19	-.14	-.09	-.12	-.09	-.12	-.23	-.12	-.11	-.11	.03	-.19
	G	-.19	-.15	-.12	-.15	-.09	-.14	-.23	-.12	-.14	-.13	.04	-.12
	R	.09	-.10	-.06	-.11	-.14	-.09						
Teacher		-.23	-.25	-.03	-.23	-.18	-.19	-.22	-.18	-.14	-.14	-.15	-.23
	G	-.21	-.24	-.05	-.23	-.18	-.19	-.20	-.17	-.16	-.14	-.16	-.19
	R	-.09	-.16	-.00	-.20	-.12	-.11						
Unknown		.14	-.13	-.11	-.09	-.28	-.10	.13	-.06	-.09	-.12	-.15	-.10
	G	.12	-.13	-.11	-.09	-.28	-.10	.11	-.06	-.08	-.12	-.17	-.05
	R	.07	-.11	-.08	-.02	-.21	-.07						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 33

Raw Correlations with Academic Performance and Raven: Prague 1991

CAMI Construct	*P*	Academic Performance 2	3	4	5	6	Tot	Raven 2	3	4	5	6	Tot
Control Expectancy													
		.18	.17	.13	.37	.28	.23	-.03	.05	-.05	-.03	.26	-.03
	G	.18	.16	.16	.37	.27	.23	.01	.09	-.10	-.03	.28	.10
	R	.18	.14	.16	.38	.24	.22						
Agency Beliefs													
Effort		.43	.41	.27	.45	.39	.39	.01	-.08	.01	.02	.16	.03
	G	.43	.40	.28	.44	.37	.38	.02	-.02	.00	.04	.18	.06
	R	.44	.40	.28	.44	.35	.38						
Ability		.41	.41	.37	.53	.54	.46	.01	.03	.00	.11	.12	.00
	G	.41	.41	.40	.54	.56	.47	.05	.04	-.05	.11	.12	.08
	R	.41	.41	.41	.53	.55	.46						
Luck		.46	.52	.31	.55	.56	.48	.08	.06	-.05	.08	.08	-.07
	G	.46	.52	.32	.56	.56	.49	.10	.10	-.05	.08	.09	.07
	R	.45	.52	.32	.55	.55	.49						
Teacher		.22	.31	.25	.32	.33	.29	.00	.05	.09	.02	.04	-.01
	G	.22	.31	.25	.30	.30	.28	.06	.07	.11	.03	.06	.03
	R	.22	.31	.26	.29	.29	.28						
Means Ends Beliefs													
Effort		.11	.02	.00	.06	-.06	.03	-.02	-.16	-.08	.06	.08	.00
	G	.11	.01	.02	.08	-.03	.03	-.03	-.13	-.13	.04	.06	.02
	R	.12	.00	.01	.08	-.03	.03						
Ability		-.05	-.04	-.04	-.09	-.04	-.05	-.16	-.17	-.16	-.14	-.12	-.12
	G	-.06	-.04	-.02	-.08	.00	-.04	-.14	-.17	-.21	-.14	-.14	-.10
	R	-.05	-.04	-.03	-.05	.02	-.03						
Luck		-.28	-.18	-.06	-.06	.00	-.11	-.17	.02	-.10	.00	.01	-.14
	G	-.28	-.18	-.08	-.09	.01	-.13	-.14	.01	-.08	.01	.01	-.04
	R	-.28	-.17	-.10	-.10	-.01	-.12						
Teacher		-.38	-.23	-.05	.02	.09	-.11	-.19	.10	-.09	.00	.00	-.03
	G	-.38	-.22	-.05	.01	.13	-.10	-.17	.07	-.09	.01	-.02	-.06
	R	-.38	-.22	-.06	.00	.13	-.10						
Unknown		-.12	-.22	-.15	-.15	-.07	-.11	-.11	-.06	-.10	-.05	-.14	-.11
	G	-.12	-.22	-.17	-.15	-.05	-.15	-.09	-.07	-.08	-.05	-.15	-.08
	R	-.13	-.22	-.18	-.14	-.03	-.14						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 34

Raw Correlations with Academic Performance and Raven: Warsaw 1991

CAMI Construct	P	Academic Performance 2	3	4	5	6	Tot	Raven 2	3	4	5	6	Tot
Control Expectancy													
		.35	.	.50	.	.53	.46	.36	.	-.14	.	.25	.19
	G	.29	.	.48	.	.50	.42	.35	.	-.14	.	.22	.16
	R	.12	.	.54	.	.43	.40						
Agency Beliefs													
Effort		.35	.	.51	.	.56	.47	.31	.	-.10	.	.36	.23
	G	.25	.	.48	.	.51	.41	.31	.	-.11	.	.32	.18
	R	.09	.	.54	.	.39	.37						
Ability		.30	.	.52	.	.54	.46	.14	.	-.05	.	.39	.17
	G	.21	.	.53	.	.60	.45	.12	.	.05	.	.40	.19
	R	.18	.	.55	.	.49	.40						
Luck		.32	.	.60	.	.50	.47	.25	.	.23	.	.37	.23
	G	.25	.	.59	.	.45	.43	.24	.	.24	.	.34	.27
	R	.13	.	.56	.	.34	.35						
Teacher		.33	.	.39	.	.33	.34	.28	.	-.05	.	.35	.09
	G	.22	.	.35	.	.19	.25	.29	.	-.05	.	.30	.19
	R	.06	.	.43	.	.09	.19						
Means Ends Beliefs													
Effort		.23	.	.40	.	.08	.23	.23	.	.23	.	.08	.18
	G	.25	.	.44	.	.11	.27	.23	.	.23	.	.09	.19
	R	.14	.	.42	.	.07	.21						
Ability		.18	.	.22	.	-.01	.13	.10	.	.21	.	.25	.10
	G	.20	.	.27	.	.03	.17	.11	.	.22	.	.27	.19
	R	.17	.	.21	.	-.14	.08						
Luck		-.10	.	-.14	.	-.05	-.09	-.22	.	.23	.	-.02	-.19
	G	-.15	.	-.09	.	.05	-.06	-.23	.	.25	.	.02	-.02
	R	-.01	.	-.18	.	-.02	-.07						
Teacher		-.23	.	-.13	.	-.04	-.13	-.41	.	.04	.	.17	-.12
	G	-.23	.	-.08	.	.04	-.09	-.41	.	.04	.	.21	-.09
	R	.01	.	-.15	.	-.14	-.07						
Unknown		.04	.	-.32	.	-.11	-.12	-.11	.	-.13	.	-.26	-.15
	G	.01	.	-.29	.	-.01	-.10	-.12	.	-.13	.	-.23	-.15
	R	.10	.	-.33	.	.02	-.04						

Note. *P* is what has been partialed. *G* = the effects of gender have been partialed from the by grade estimates and the effects of gender, linear grade, and quadratic grade have been partialed from the overall (Tot) estimates. *R* = additional Raven and Raven2 partialed.

Table 35
Overview of Differences Between Schools in the Various Socio-Cultural Contexts

Data-set			Δχ2	df	p	Unequated Constructs	ratio	%
E90	s:	Means	22.31	11	0.02			
		Variances	9.50	11	0.58			
		Correlations	84.96	54	0.01			
		Gender/Grade/Grade2	39.46	34	0.24			
E91	s:	Means	25.61	11	0.01			
		Variances	10.88	11	0.45			
		Correlations	76.74	54	0.02			
		Gender/Grade/Grade2	73.38	34	0.00			
	f:	Gender/Grade/Grade2	54.42	31	0.01	agTEA/Grade	1/34	97
E92	s:	Means	39.32	22	0.01			
		Variances	13.37	22	0.92			
		Correlations	142.19	108	0.02			
		Gender/Grade/Grade2	97.98	68	0.01			
U92	s:	Means	9.37	11	0.59			
		Variances	13.06	11	0.29			
		Correlations	84.57	54	0.01			
		Gender/Grade/Grade2	63.65	34	0.00			
	f:	Gender/Grade/Grade2	57.34	33	0.01	agTEA/Grade	1/34	97
J93	s:	Means	50.23	11	0.00			
		Variances	40.29	11	0.00			
		Correlations	85.57	54	0.00			
		Grade/Grade2	114.99	22	0.00			
		Gender	13.12	12	0.36			
	f:	Means	16.72	5	0.01	agTEA agLUC Cntrl meTEA meEFF meLUC	6/11	45
		Variances	14.86	10	0.14	meTEA	1/11	91
		Correlations	77.72	53	0.02	meTEA/meLUC	1/66	98
		Grade/Grade2	30.29	14	0.01	agTEA/Grade agEFF/Grade Cntrl/Grade agLUC/Grade meUNK/Grade meLUC/Grade meEFF/Grade2 meABL/Grade2	8/22	64

Table 35, continued

Data-set			Δχ2	df	p	Unequated Constructs	ratio	%
M90	s:	Means	12.93	11	0.30			
		Variances	22.35	11	0.02			
		Correlations	71.96	54	0.05			
		Gender/Grade/Grade2	48.78	25	0.05			
M92	s:	Means	17.32	11	0.10			
		Variances	14.92	11	0.19			
		Correlations	61.02	54	0.24			
		Gender/Grade/Grade2	60.79	34	0.00			
	f:	Gender/Grade/Grade2	48.18	33	0.05	meABL/Grade	1/34	97
M94	s:	Means	29.50	11	0.00			
		Variances	15.97	11	0.14			
		Correlations	104.21	54	0.00			
		Gender/Grade/Grade2	65.29	34	0.00			
	f:	Means	24.83	10	0.01	ACHVE	1/11	91
		Correlations	80.20	51	0.01	meABL/meEFF meUNK/meTEA meLUC/meABL	3/66	95
		Gender/Grade/Grade2	48.18	33	0.05	meEFF/Grade2	1/34	97
P91	s:	Means	40.04	33	0.19			
		Variances	66.52	33	0.00			
		Correlations	185.79	162	0.10			
		Gender/Grade/Grade2	200.76	102	0.00			
	f:	Variances	53.60	31	0.01	meEFF(schl 3) ACHVE(schl 4)	2/33	94
		Gender/Grade/Grade2	131.75	94	0.01	ACHVE(schl 2)/Gender agEFF(schl 2)/Gender agTEA(schl 3)/Gender meUNK(schl 3)/Grade agTEA(schl 4)/Grade meEFF(schl 2)/Grade2 agLUC(schl 3)/Grade2 ACHVE(schl 4)/Grade2	8/102	92
W91	s:	Means	25.18	11	0.01			
		Variances	17.32	11	0.10			
		Correlations	88.17	54	0.00			
		Gender/Grade/Grade2	65.00	34	0.00			
	f:	Correlations	81,81	53	0.01	agLUC/meEFF	1/66	98
		Gender/Grade/Grade2	52.79	33	0.02	agTEA/Grade	1/34	97

Table 35, continued

Data-set			Δχ2	df	p	Unequated Constructs	ratio	%
W92	s:	Means	19.24	11	0.06			
		Variances	7.15	11	0.79			
		Correlations	79.13	54	0.15			
		Gender/Grade/Grade2	61.48	34	0.00			
	f:	Gender/Grade/Grade2	47.46	33	0.05	meEFF/Grade	1/34	97
W93	s:	Means	45.44	11	0.00			
		Variances	22.94	11	0.02			
		Correlations	84.10	54	0.01			
		Gender/Grade/Grade2	57.13	34	0.01			
	f:	Means	23.88	9	0.01	agTEA meEFF	2/11	82
Z91	s:	Means	16.36	11	0.13			
		Variances	15.51	11	0.16			
		Correlations	63.05	54	0.19			
		Gender/Grade/Grade2	48.91	34	0.05			

Note. s = statistics. f = statistics of models with unequated constructs. ratio = percentage of difference. % = percentage of similarity. Schl = School.

Appendix C: Conceptual Version of the CAMI: English Language edition.

1. AGENCY BELIEFS: EFFORT (agEFF)

Positive Items

P1 (01). I can really pay attention in class.

P2 (34). When it comes down to it, I can really work hard at school.

P3 (39). If I decide to, I can listen very carefully to what my teacher says.

Negative Items

N1 (04). I have a hard time making myself listen carefully to my teachers.

N2 (30). It's hard for me to really put in enough effort at school.

N3 (44). I have trouble paying attention in class.

2. AGENCY BELIEFS: ABILITY (agABL)

Positive Items

P1 (02). I can learn the things I need for school pretty fast, without really trying a lot.

P2 (11). I'm pretty smart in school--even without working very hard.

P3 (42). When it comes to school, I'm pretty smart.

Negative Items

N1 (07). I'm just sort of dumb in school.

N2 (29). Sometimes I think that I just don't have the brains to do good at school.

N3 (41). I often feel that I'm not smart enough to get the answers right (like in math or spelling), no matter how hard I try.

3. AGENCY BELIEFS: LUCK (agLUC)

Positive Items

P1 (08). I would say that I'm a person who has luck with my homework.

P2 (09). When it comes to getting good grades, I usually have lots of luck.

P3 (31). When it comes to school work, I'm a lucky duck.

Negative Items

N1 (06). When it comes to answering hard questions, I'm usually out of luck.

N2 (28). As far as learning something hard goes, I'm usually unlucky.

N3 (43). I'm pretty unlucky with my homework.

4. AGENCY BELIEFS: TEACHERS (agTEA)

Positive Items

P1 (14). On the whole, my teachers like me.

P2 (36). I have teachers who will help me when I want them to.

P3 (38). When I think about it, I would say that my teachers are pretty satisfied with me.

Negative Items

N1 (03). I think that my teachers don't really like me very much.

N2 (35). I have a hard time getting the teacher to help me even when I need it.

N3 (37). It's difficult for me to get my teachers to help me very much, even when I need it.

5. CONTROL EXPECTANCY (Cntrl)

Positive Items

P1 (10). When I sit myself down to learn something really hard, I can learn it.

P2 (13). If I decide not to get any bad grades, I can really do it.

P3 (27). If I decide not to get any problems wrong (like on a spelling paper), I can really do it.

P4 (33). If I want to do good in school, I can.

6. MEANS-ENDS BELIEFS: EFFORT (meEFF)

Positive Items

P1 (12). When a kid knows a lot about something, is it because the kid works hard at learning it?

P2 (15). When a kid does good on schoolwork, is it because the kid works very carefully?

P3 (57). What's the reason kids understand what teachers say? Is it because they pay attention and really listen?

Negative Items

N1 (18). When a kid doesn't understand something at school, is it because the kid doesn't pay enough attention?

N2 (54). When kids don't learn very much in class, is it because they don't work very hard?

N3 (56). A teacher asks a kid a question and the kid gives the wrong answer. Is that because the kid isn't trying hard enough?

7. MEANS-ENDS BELIEFS: ABILITY (meABL)

Positive Items

P1 (05). When kids give the right answers to questions in class, is it because they're just good students?

P2 (17). A kid manages to learn hard things in school, is it because the kid's smart?

P3 (46). If kids understand things fast, is it because they're just very good at school?

Negative Items

N1 (19). When kids get bad grades, is it just because they're no good at school?

N2 (48). When kids don't understand something, is it because they're just no good at school?

N3 (58). A kid gives the wrong answer to a teacher's question. Is it because the kid's just not smart enough?

8. MEANS-ENDS BELIEFS: TEACHERS (meTEA)

Positive Items

P1 (20). Let's say a kid gets good grades. Is that because the kid gets along well with the teacher?

P2 (47). When a kid does well in school is that because the kid gets along fine with the teachers?

P3 (49). When kids do really well in a subject, is it because of the teacher?

Negative Items

N1 (16). Let's say a kid gets bad grades. Is it because the teacher doesn't like that kid?

N2 (25). When a kid does bad in school, is it because the teacher doesn't really like that kid very much?

N3 (32). When kids do bad in a subject, is it usually because the teachers just don't help them?

9. MEANS-ENDS BELIEFS: LUCK (meLUC)

Positive Items

P1 (24). Is doing well in school a matter of luck?

P2 (51). Does getting good grades come from luck?

P3 (53). When a teacher calls on a kid and the kid knows the answer, would you say it's because the kid's lucky?

Negative Items

N1 (22). When kids get bad grades is it because they have bad luck?

N2 (50). When a kid does bad on homework, is that because the kid's out of luck?

N3 (55). When kids have a hard time learning something, is it because the kids are unlucky?

10. MEANS-ENDS BELIEF: UNKNOWN FACTORS (meUNK)

Positive Items

P1 (23). When kids do better than usual in a subject, is it hard to tell why?

P2 (45). When kids get good grades in school, is it hard to know why?

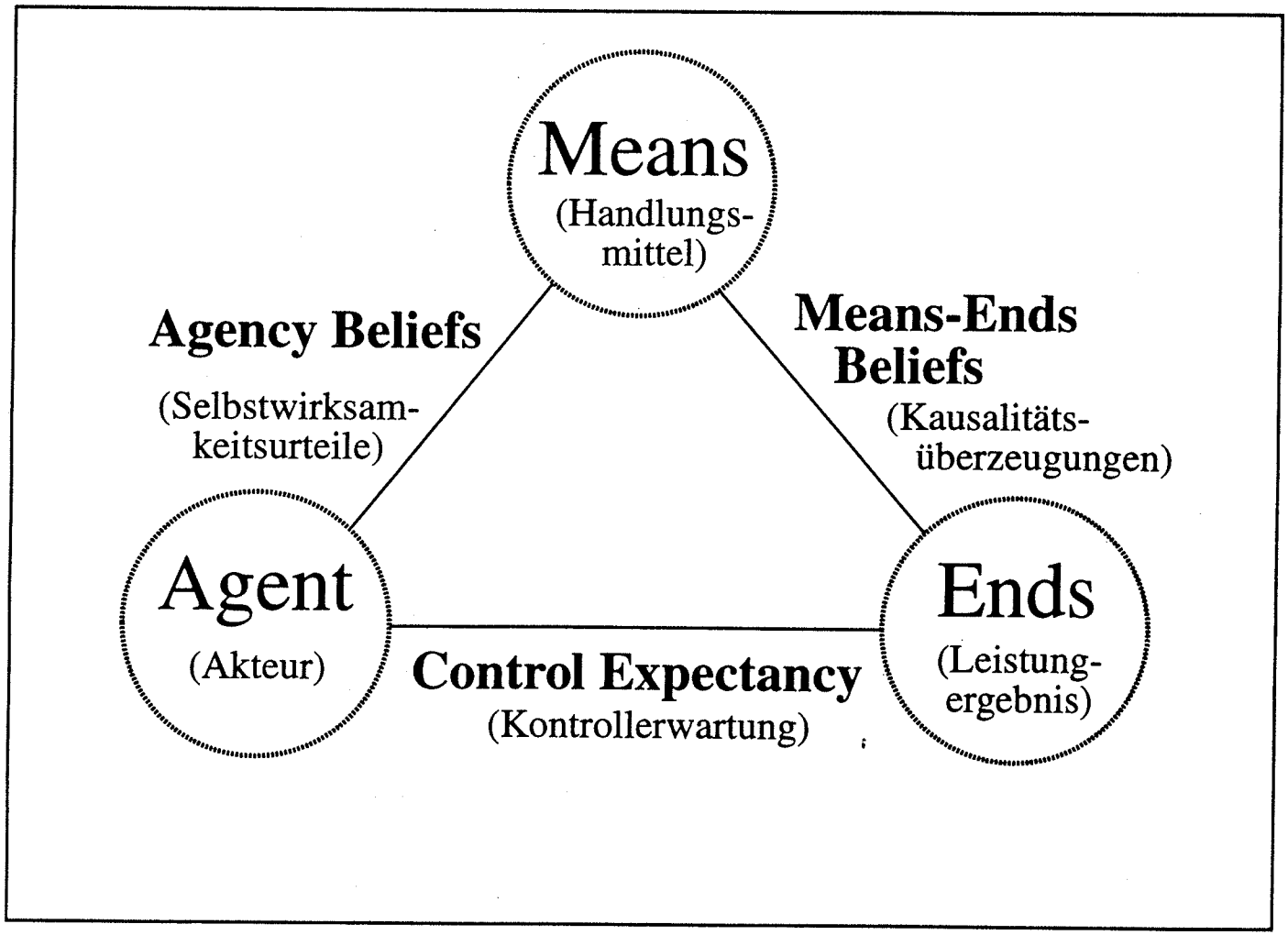
P3 (52). Just imagine that a kid does really great on a test. Is it hard to know the reason why?

Negative Items

N1 (21). When kids mess up in school, is it hard to figure out why that happens?

N2 (26). A kid gets lots of problems wrong (like in spelling). Is it hard to know the reason why?

N3 (40). When kids give the wrong answer to a teacher's question, is it hard to find out why that happens?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Agency Beliefs
(Selbstwirksam-
keitsurteile)
Means-Ends
Beliefs
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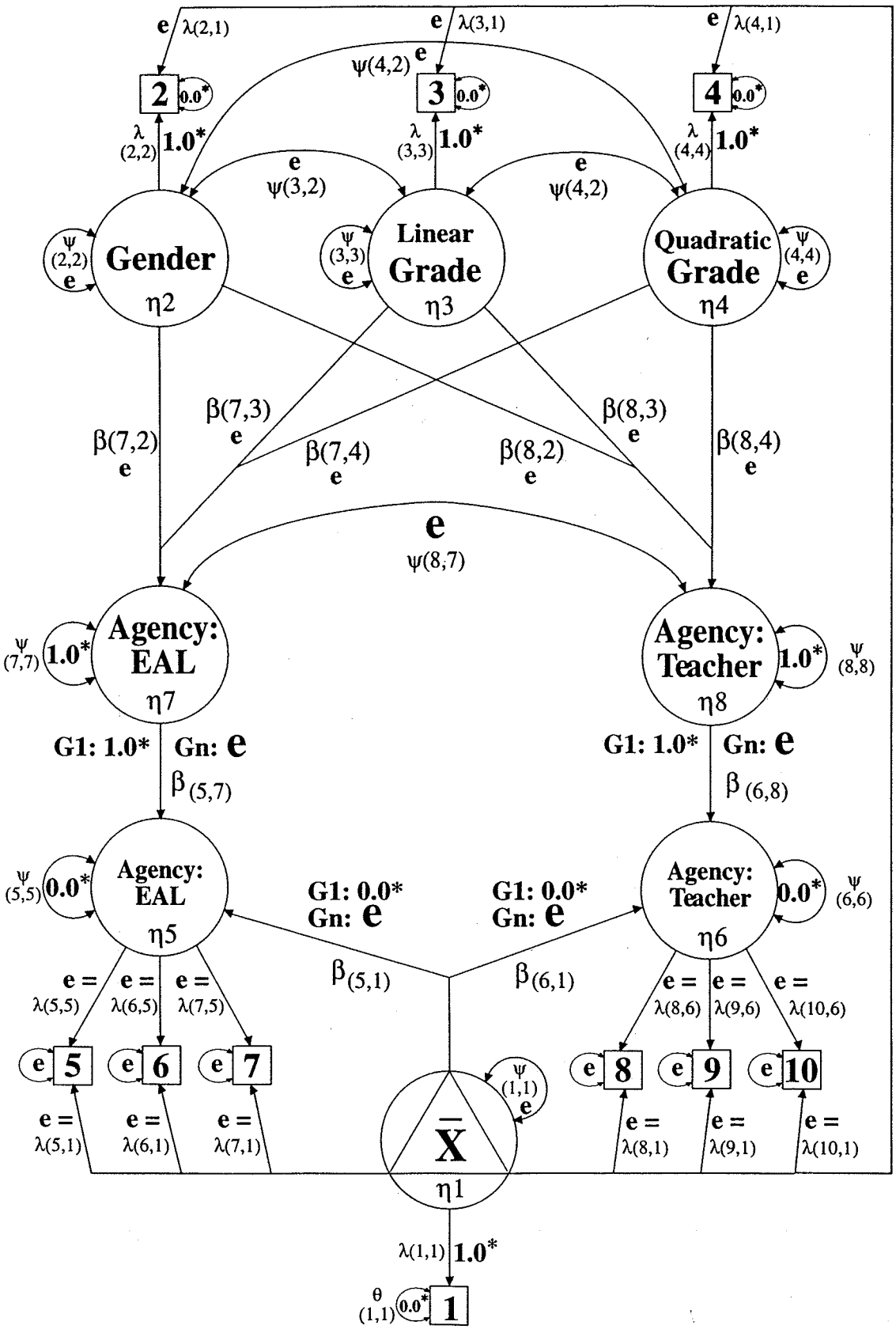
überzeugungen)
Agent
(Akteur)
Ends
(Leistung-
ergebnis)
Control Expectancy
(Kontrollerwartung)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3 0.0*
4 0.0*
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λ (3,3) 1.0*
λ (4,4) 1.0*
e ψ(3,2)
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ψ (2,2) e
Gender η2
ψ (3,3) e
Linear Grade η3
Quadratic Grade η4
ψ (4,4) e
β(7,2) e
β(7,3) e
β(7,4) e
β(8,3) e
β(8,2) e
β(8,4) e
e ψ(8,7)
ψ (7,7) 1.0*
Agency: EAL η7
Agency: Teacher η8
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G1: 1.0* Gn: e
β (5,7)
G1: 1.0* Gn: e
β (6,8)
ψ (5,5) 0.0*
Agency: EAL η5
G1: 0.0* Gn: e
G1: 0.0* Gn: e
Agency: Teacher η6
0.0* ψ (6,6)
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e = λ(6,5)
e = λ(7,5)
β(5,1)
β(6,1)
e = λ(8,6)
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e 7
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e 10
ψ (1,1) e
e = λ(5,1)
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X̄ η1
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θ (1,1) 0.0*
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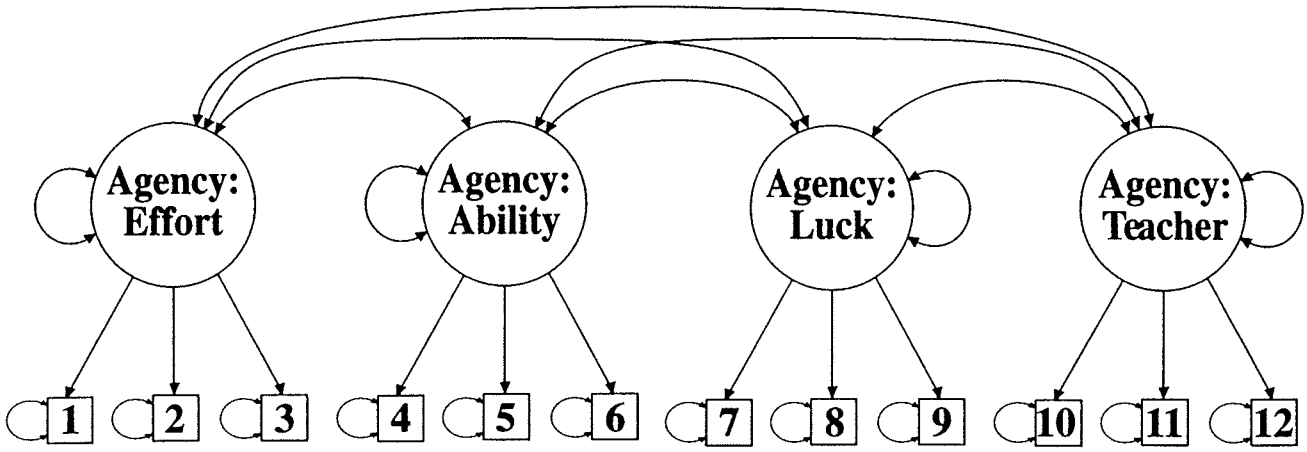
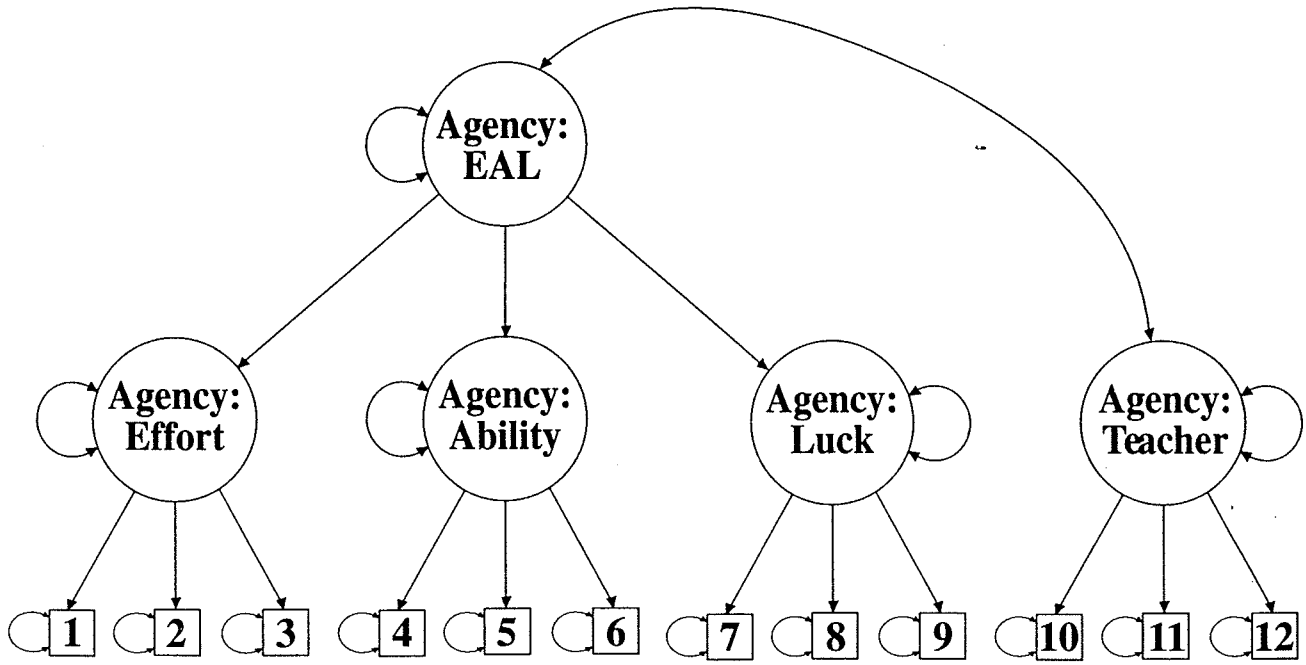


Panel A



Panel B