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The Scale of Personal Conceptions of Intelligence: A comparison of the Italian, Portuguese, and Romanian versions[1]

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Abstract

Background: The aim of this research project was to conduct studies of confirmatory factor analyses of ECPI (Scale of Personal Conceptions of Intelligence) in three different cultural contexts – Italy, Portugal and Romania. We hypothesized a bi-factor structure of the instrument constructed in Portugal by Faria (1990; 2006). Method: 617 subjects, 222 Italian, 200 Portuguese, and 195 Romanian students participated in the study, attending high school, equally distributed according to their gender and socioeconomic status. We administered the ECPI composed of 26 items, of which 15 static and 11 dynamic. Results: In the three cultural contexts the results revealed the existence of 7 items, one measuring the incremental and 6 the static theory, with low factor loadings – inferior to .30. These results convinced us to test a new model eliminating these 7 items. Therefore, even if the fit of the model improved, this could not be considered a satisfactory result. Conclusions: Future research could include more in depth analyses of linguistic properties of items which compose the static sub-scale, in order to find better operationalizations of the static personal conceptions of intelligence.

Keywords: Motivation, Self-Concept, Psychological Assessment.

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1. Introduction

The present study on personal conceptions on the intelligence of Italian, Portuguese, and Romanian students extends previous research which was aimed at comparing the psychometric properties of the Portuguese and Italian versions of the Scale of Personal Conceptions of Intelligence (Pepi, Faria, & Alesi, 2007).

Faria (1990, 1998, 2003, 2006) developed and validated a questionnaire called the Scale of Personal Conceptions of Intelligence, originally abbreviated ECPI (Scale of Personal Conceptions of Intelligence), to measure Portuguese adolescents' beliefs about the nature of their own abilities. The instrument stems from Carol Dweck's theoretical model (1999) which postulates two different views of ability or intelligence, incremental and entity views. Individuals believing in the incremental conception conceive intelligence as a controllable quality, malleable and susceptible to being increased through effort, which leads prevalently to the adoption of learning goals designed to increase one's ability and competency. On the other hand, individuals affirming the entity conception, conceive intelligence as a fixed and uncontrollable quality, inherent in the individual, which leads prevalently to performance goals for the immediate demonstration of the adequacy of one's abilities (Dweck & Leggett, 1988; Elliott & Dweck, 1998; Dweck, 1999; Grant & Dweck, 2003).

More specifically, the ECPI consists of 26 items, 11 for the *incremental* and 15 for the *entity* conception.

The ECPI is a multidimensional instrument since it also includes items measuring the relevance of *effort* versus *ability* and the choice of *learning goal*s related to mastering new abilities versus *performance goals* related to *demonstrating* one's own intelligence through the achievement of positive outcomes.

On the whole our earlier study evidenced to a satisfactory degree psychometric properties, both in the Italian and in the Portuguese contexts (Pepi et *al*., 2007). In particular, the results of factor analyses revealed the existence of two distinct factors, static and dynamic, that explain together 40% of the total variance. Factor 1 was loaded prevalently by the dynamic items, which aim to measure intelligence as a potential that can be improved and increased through effort, while factor 2 was loaded by the static items, which measure intelligence as a fixed and immutable gift. The internal consistency of the scales evidenced alpha coefficients between .72 and .80. Nevertheless, we had pointed out some shortcomings of the mentioned study.

First, we used two rather similar cultural contexts (Italy and Portugal); second, the sample needed to be futher expanded. These limits gave rise to the need of further research that would provide us with a more comprehensive assessment of the psychometric properties of the ECPI in other cultural contexts.

As such, we conducted further research employing a third terriorial context, Romania. Within the context of this research, this country results qualitatively different, due to its socio-economic conditions and also with regard to the cultural dimension of individualism-collectivism (IND/COL). The majority of cross-cultural studies of ability-related beliefs has long been focused on the analysis of the individualism-collectivism dichotomy (Hofstede, 1980; Kagitçibaci, 1994; Heine, Kitayama, & Lehman, 2001; Harrington & Liu, 2002). Individualism considers the individual as the unit of analysis in a society, supports the perception of the uniqueness of personal qualities, and proposes the construction of the self independently from the group, with particular emphasis on idiocentrism, self-efficiency, autonomy, and competition, to help achieve personal goals while pursuing self-realization and success (Triandis, McCusker, & Hui, 1990; Carver, Lawrence, & Scheier, 1996). Collectivism, on the contrary, considers the group as the unit of analysis in a society and asserts that personal involvement and commitment are dimensions defined by one's own group of reference thus leading to an interdependent construction of the "Self" (Sampson, 1988). Emphasis is placed on aspects such as allocentrism, obedience, and conformity, with special attention given to the family as the most important in-group (Georgiou, 1995).

Specifically, Italy and Portugal appear to be more easily classified as individualistic cultures characterized by elements such as dominance of individual interests, freedom of the press, political power exercised by the electorate, the prevalence of the value of freedom over that of equality, and the search for personal self-realisation as the main objective of the individual (Faria, Pepi, & Alesi, 2004; Pepi, Faria, & Alesi, 2004).

The differences between Portugal and Romania identified by Ciochină and Faria (2006a; 2006b) appear to be greater. Although both countries have undergone dictatorial regimes (fascism in Portugal and communism in Romania), "...which conditioned the structuring of a collectivist mentality through ideological, political, cultural, and social mechanisms" (Ciochină & Faria, 2006b), they differ in that the Portuguese society is characterized by assimilation to a greater extent of individualistic values and norms, as a result of a higher Gross National Product and of an economy strongly based on individual interests.

These differences in IND/COL foster distinct belief systems about the meaning of the terms "ability" and "effort" and influence personal conceptions of intelligence. Portuguese tend to orient the conception of "intelligence" towards regarding one's personal attributes and motivational elements such as concentration, effort, interest, curiosity, while the Romanians orient it towards more pragmatic factors, with social weight such as "... getting by in society, not committing big mistakes, appearing intelligent in life" (Ciochină & Faria, 2006a, p. 1024).

Given these theoretical premises, this study aims to compare the psychometric properties of the Scale of Personal Conceptions of Intelligence in three cultural contexts. In particular, our goal is to verify its factor structure through confirmatory factor analyses in three samples of Italian, Portuguese, and Romanian adolescents.

2. Method

2.1 Instruments and procedure

Subjects were given the *Scale of Personal Conceptions of Intelligence* consisting of 26 items, 15 for the entity conception and 11 for the incremental one. The entity or static items describe intelligence as a fixed trait which is not under the individual's own control, as a gift the individual is endowed with and cannot change (*I have a certain amount of intelligence and I can't do much to change it or The difficulties and the challenges I encounter prevent me from developing my intelligence*). In contrast, the incremental or dynamic items described intelligence as a quality that is controllable, malleable and susceptible to being improved as a function of commitment and effort (*Effort enables me to become more intelligent* or *What I learn with the tasks I make is more important than the results obtained*).

The administration was collective and the task lasted no more than 20 minutes. The Portuguese version of the scale was translated into Italian by the collaborative efforts of the Portuguese and Italian authors. The same administration procedure was used in both countries. In particular, subjects were asked to read each sentence carefully and express their degree of agreement with it, using an answer scale ranging from *Totally agree* to *Totally disagree*. The scoring were from 1 to 6 points for each dynamic item and from 6 to 1 point for each static item: the maximum score (6) corresponded to total agreement with the items from the dynamic scale or total disagreement with the items from the static scale. On the contrary, the minimum score (1) corresponded to total disagreement with the items from the dynamic scale and total agreement with the items from the static scale.

Thus, higher scores indicated more dynamic and less static conceptions of intelligence and thus produced a dynamic evaluation of the scale.

In Italy we employed the Italian version of ECPI obtained by previous translation from Portuguese to Italian and then by back translation from Italian into Portuguese to ensure maximum linguistic and cultural coherence among the versions (Van de Vijver & Hambleton, 1996). As mentioned in the Introduction section the Italian ECPI showed a bifactor structure and the internal consistency of the scales yielded alpha coefficients between .72 and .80.

In the Portuguese sample, Cronbach' alpha coefficient is .78 for the static subscale and .78 for the dynamic one (Faria & Fontaine, 1997). In the Romanian sample, previous studies (Ciochină & Faria, 2006b) yielded an alpha coefficient of .72 for the static subscale and of .77 for the dynamic one.

2.2 Sample

The subjects in this study were 617 Italian, Portuguese and Romanian students attending the tenth or the twelve grade of secondary school (humanistic, scientific and technical schools). Specifically, the Italian group consisted of 222 students, with an average chronological age of 17.1 yrs. old (*SD* = 1.07). The Portuguese group consisted of 200 students, with an average chronological age of 17.6 yrs. old (*SD* = .86). The Romanian group consisted of 195 students, with an average chronological age of 17.1 yrs. old (*SD* = 1.02). Look at table 1 for other demographics.

Table 1 – *Sample distribution by cultural context, school grade, gender, scholastic emphasis and socioeconomic status.*

		School Grade			*Gender*			*Scholastic emphasis*				*Socioeconomic status*			
Cultural Context		*10th*	*12th*	*Total*	*F*	*M*	*Total*	*S*	*H*	*T*	*Total*	*High*	*Middle*	*Low*	*Total*
Italian	N	111	111	222	110	112	222	73	74	75	222	87	93	42	222
	%	50.0	50.0	100	50.5	49.5	100	32.9	33.3	33.8	100	39.2	41.9	18.9	100
Portuguese	N	100	100	200	131	69	200	70	77	53	200	49	77	73	199
	%	50.0	50.0	100	34.5	65.5	100	35.0	38.5	26.5	100	24.6	38.7	36.7	99.0*
Romanian	N	97	98	195	134	61	195	57	74	64	195	59	122	2	183
	%	49.7	50.3	100	31.3	68.7	100	29.2	37.9	32.8	100	30.3	62.6	1.0	93.9**

Legend: S = scientific-oriented program; H = humanistic; T = technical; SES = Socioeconomic status.
Note: *There was a missing value (1%) in the answers to the SES variable.
**There were 12 missing values (6.1%) in the answers to the SES variable.

3. Results

A confirmatory factor analysis was conducted using the EQS program, version 6.1. In evaluating the fit of the models that we tested, we took into account the following fit indices: χ^2, CFI (*comparative fit index*), RMR (*root mean-square residual*) and RMSEA (*root mean-square error of approximation*).

The χ^2 analyses the discrepancy between the observed model and the theoretical one. If a certain model has a statistically significant χ^2, this means that the observed model differs from the theoretical one. Since the value of χ^2 is sensible to the dimension of the sample (Schumacker & Lomax, 1996, in Santos & Maia, 2003), we also took into consideration other three indices for a more exhaustive analysis of the fit.

Thus, we considered the CFI which compares the observed model with a null model, that is, a model in which no estimates are made. The values of the CFI range between 0 and 1. Values above .90 and .95 are considered to indicate an acceptable and good fit respectively (Byrne, 1994).

Another index we looked at was the RMR which provides a summary of the magnitude of the residuals. The value of the RMR should be inferior to .05 (Byrne, 1994). Finally, the last index we employed was the RMSEA which analyses the approximation of the observed model to the population model. Consequently, this index should have a *p* value inferior to .05. Models with values of the RMSEA superior to .01 should be rejected and those with values of the RMSEA between .08 and .05 or inferior to .05 should be maintained in the analyses (Byrne, 1994).

The first model – the theoretical model – is presented in Figure 1 with two factors, 15 items which load on the static-entity factor, and 11 which load on the dynamic-incremental factor, analyzed separately for the Portuguese, Romanian, and Italian groups. The hypothesis is that in each sample group, the items of the two sub-scales (static and dynamic) load only on their latent variable, either the static or the dynamic one.

In none of the three samples, Italian, Portuguese, and Romanian, did the results indicate a satisfactory fit to the theoretical model. In fact, in each group the same 7 items presented low loadings, inferior to .30. Specifically, of these items, 6 measure the static conception (items n. 1, n. 10, n. 14, n. 16, n. 19, and n. 20) and 1 measures the dynamic conception (item n. 4). The values of the fit indices considered in the CFA are presented in Table 2.

Figure 1 – *Theoretical model of ECPI*

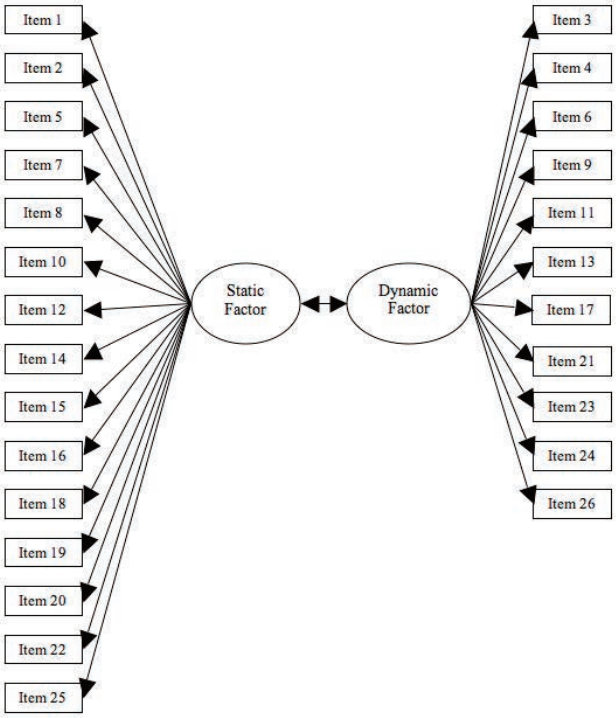
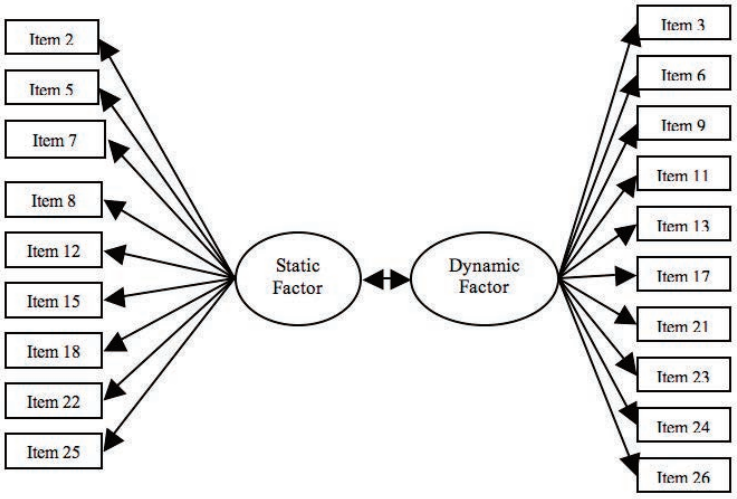


Table 2 – *Values of fit indices to the theoretical model in Italian, Portuguese and Romanian samples.*

	Theoretical model				
	χ^2	*gl*	*CFI*	*RMR*	*RMSEA*
Italian sample (N = 222)	763.78	298	.63	.18	.09
Portuguese sample (N = 200)	764.81	298	.62	.19	.09
Romanian sample (N = 195)	762.90	298	.62	.19	.09

Given the unsatisfactory fit to the theoretical model, we decided to test a *reconfigured model* of the ECPI, whose structure did not include items with loadings lower than .30, mentioned above. Consequently, the static sub-scale was reduced to 9 items (n. 2, n. 5, n. 7, n. 8, n. 12, n. 15, n. 18, n. 22, and n. 25) and the dynamic sub-scale to 10 items (n. 3, n. 6, n. 9, n. 11, n. 13, n. 17, n. 21, n. 23, n. 24, and n. 26). The configuration of the new model is presented in Figure 2.

Figure 2 – *Reconfigured model of ECPI*



The new model was tested in the Portuguese, Romanian, and Italian groups and yielded better values of the fit indices, although they were not completely satisfactory, as it can be seen in Table 3.

Table 3 – *Values of fit indices to the reconfigured model in Italian, Portuguese and Romanian samples*

	Theoretical model				
	χ^2	*gl*	*CFI*	*RMR*	*RMSEA*
Italian sample (N = 222)	321.03	150	.81	.12	.07
Portuguese sample (N = 200)	342.65	150	.81	.13	.08
Romanian sample (N = 195)	370.92	150	.79	.12	.07

The improved results in all three groups (Italian, Portuguese, and Romanian) obtained with the reconfigured model led us to conduct an analysis of configural invariance, that is, we verified if the two new factors are common to the Portuguese, Italian, and Romanian samples and if they are loaded by the same items. In this kind of analysis the samples were considered together (multiple population analysis).

We then conducted a final analysis of metric invariance, to test the invariance of the magnitude of the parameters of our model (the loadings of the items, the variance errors, and the correlation between factors) within the three groups. We began to test the model starting from the supposition that the magnitude of the loadings of the items on the two factors is equal in the three groups. Subsequently, we tested the model by assigning an equal correlation between the two factors in the Italian, Portuguese, and Romanian groups. Lastly, we tested the model using the supposition that the variance errors of the items are also equal in the three groups. The results of these analyses are presented in Table 4.

Table 4 – *Values of fit indices to the reconfigured model after the analyses of configural and metric invariance*

	Total sample (N = 617)				
	χ^2	*gl*	*CFI*	*RMR*	*RMSEA*
Analysis of configural invariance	999.01	452	.80	.13	.04
Loadings of factors	999.41	485	.81	.13	.04
Correlation between factors	999.56	487	.81	.13	.04
Variance errors	1001.24	525	.82	.13	.04

The results obtained after the analyses of metric invariance did not point to a good fit of the data to the introduced constraints (factor loadings, variance errors, and correlation between factors). In particular, although items n. 5 and n. 25, while testing the theoretical model, revealed loadings superior to .30 in all the three groups, they contributed greatly to the size of the residual values among the tested models.

4. Discussion and conclusions

The goal of this project was to conduct a comparative study of confirmatory factor analyses of the Scale of Personal Conceptions of Intelligence (ECPI) –

constructed and validated for the Portuguese population by Faria (1990, 1996, 2003, 2006), for the Italian population by Pepi, Faria, and Alesi (2007), and for the Romanian population by Ciochină and Faria (2006b) – in three cultural contexts, Italian, Portuguese, and Romanian.

Differing from the scale of Dweck (Dweck, 1993, in Faria 1998), which had only three items measuring the static conception, the final version of the scale of Faria was composed of 26 items; this scale includes new aspects related to the two personal conceptions of intelligence, such as the role of effort, different ways of demonstrating one's ability, and the avoidance of failure. Previous studies conducted with exploratory factor analyses were able to identify a bi-factor structure of he ECPI, comprising both an entity or static factor, and an incremental or dynamic one, representing the two types of personal conceptions of intelligence theorized by Dweck (1999).

The results obtained in this study revealed a poor fit of the theoretical model of the ECPI, moreover, in all three cultural groups there were 7 items, of which 6 illustrative of the static conception and 1 illustrative of the dynamic conception, which presented very low loadings on their original factors. The low loadings, below .30, of the same 7 items in the three groups suggested to us that it was necessary to test, in each group, a reconfigured model which eliminated these items, and subsequently, to analyze – using the entire sample –, the configural and metric invariance. In light of these analyses, although the data yielded indices of improved fit, they still were not yet entirely satisfactory. These results thus suggested that the 7 eliminated items may be actually correlated with other items requiring further investigation in the future.

Specifically, we eliminated from the static sub-scale in all three groups – Italian, Portuguese, and Romanian – items n. 1 (*I have a certain amount of intelligence and I cannot do much to change it*), n. 10 (*Good performance in a task is a good way of showing others that I'm intelligent*), n. 14 (*Good preparation for assignment I must do can be a good way to show others that I'm intelligent*), n. 19 (*Getting high marks on an assignment demonstrates my intelligence*), and n. 20 (*The mistakes I make should be forgotten because they demonstrate that I'm not very intelligent*). Except for item n. 1, the other 5 items measure personal conceptions of intelligence in their relation to success and achievement of positive results (item n. 10 and n. 19), effort (item n. 14 and item n. 16), and the value of one's mistakes (item n. 20).

Of these items, only item n. 1 explicitly describes intelligence as a "quantity" in a de-contextualized manner, without any reference to individual factors, for example personal effort, or factors linked to the school context, for example the difficulty of assignments.

Nevertheless, although this item clearly aims to capture the static nature of

intelligence, its formulation, unusual in spoken Italian, Portuguese and Romanian – amount of intelligence –, may have led students to express lower agreement with the item, unlike the other items also designed to measure intelligence in a de-contextualized manner, but which were maintained in the scale (item n. 15, *I cannot increase my innate intelligence*, item n. 18, *If I'm not as intelligent as I would like, I cannot do much to change this,* item n. 22, *I cannot change my intelligence much*).

The low loadings of the remaining items of the static factor may indicate problematic aspects related to the operationalization of the static personal conception of intelligence. For example, as far as items n. 10 and n. 19 are concerned, it may be that succeeding or receiving high marks on an easy assignment is not equivalent to succeeding when the assignment is difficult. Thus it is improbable that there will be univocal agreement with the idea that success and high marks are indicators of intelligence. At the same time, succeeding or receiving high marks on a difficult task may be indeed a way to show others proofs of intelligence, without inferring that one has a static conception of intelligence. As far as item n. 14 is concerned, the introductory wording "*Good preparation for an assignment ...*" might induce the student to respond more in terms of evaluating the effort applied to the preparation of an assignment, rather than in terms of demonstrating intelligent behaviors to others. An alternative wording which more clearly indicates a performance objective related to the static-entity pole could be "*Good preparation of an assignment ...*", although, once again, this would not necessarily mean that one has a static conception of intelligence.

Moreover, the students in all three cultural contexts do not seem to perceive effort, referred to in item n. 16, and errors, referred to in item n. 20, as indicators of lesser competence. In the first case, it is possible that the value of effort is linked to a possible social representation of effort in the school context as an indicator of persistence and perseverance. Similarly, in the second case regarding errors, we can cite very common aphorisms in the three cultures such as "to err is human" or "we learn from our mistakes" which may influence the meaning students attach to the process of making mistakes.

Thus, for the future, it is necessary to reconsider the items which compose the static sub-scale, in order to find better operationalizations of the static personal conceptions of intelligence.

We also eliminated item n. 4 from the dynamic sub-scale, *What I learn by doing my assignments is more important than the marks I receive*; from a theoretical standpoint, the belief expressed in this item brings up a very complex issue in the sphere of academic motivational psychology dealing with overcoming dichotomous constructs.

If it is true that learning objectives implicate the desire to acquire new abilities and master new tasks to increase one's abilities in a long-term time frame, and on the contrary, that performance objectives imply short-term comparative evaluations and the achievement of positive assessments, it cannot be denied that both categories are "normal and almost completely universal and both contribute to success" (Dweck, 1999). In fact, in an ideal situation of school performance, students would direct themselves towards learning and performance goals simultaneously, tackling tasks with the goal of acquiring new abilities and, at the same time, of achieving positive results and meaningful social approval (Alesi & Pepi, 2008). In addition this theoretical aspect brings up another crucial question concerning the difficulty of measurement of these variables involving opposing orientations, such as incremental or entity conception, intrinsic or extrinsic motivation, learning or performance goal (Fulmer & Frijters, 2009).

The existence of the above mentioned items may suggest the possibility that they load on some third factor. However, they share essential characteristics with other items that revealed satisfactory factor loadings and were retained in the questionnaire, that is they were all conceived in order to measure contextual aspects attached to the perception of the static or dynamic nature of intelligence: success, failure and effort. Therefore it would be neither informative nor justified to test a third factor of the ECPI since this third factor does not comprise items different from those kept in the questionnaire.

Consequently, as we indicated above when analyzing the items which were eliminated, the problem might reside either in their formulation (items n. 1 and n. 14) or in their interpretable nature (items n. 4, n. 10, n. 16, n. 19 and n. 20).

As such, before proceeding to further factor analyses, our aim is to reconsider the formulation of the items that proved to be problematical, and to achieve in the clearest possible way an introduction to their aspects which refer to the relations between success, failure, effort and intelligence.

References

Alesi, M., & Pepi, A. (2008). *L'analisi del profilo motivazionale scolastico nello sviluppo tipico e atipico*. Milano: UNICOPLI.

Byrne, B. (1994). *Structural equation modeling with EQS and EQS/Windows – Basic concepts, application and programming*. California: Thousand Oaks.

Carver C. S., Lawrence, J. W., & Scheier M. F. (1996). A control-process perspective on the origins of affect. In L.L. Martin & A. Tesser (Eds.), *Striving and feeling: interactions among goals, affect and self-regulation* (pp. 11-52). Hillsdale, NJ: Erlbaum.

Ciochină, L., & Faria, L. (2006a). A influência da dimensão cultural de individualismo-colectivismo nas concepções pessoais de inteligência de adolescentes portugueses e romenos. In C. Machado, L. Almeida, M. A. Guisande, M. Gonçalves, V. Ramalho (Coords.), *Actas da XI Conferência Internacional de Avaliação Psicológica: Formas e Contextos* (pp. 1015-1026). Braga: Psiquilíbrios Edições.

Ciochină, L., & Faria, L. (2006b). Concepções pessoais de inteligência de estudantes portugueses e romenos. Um estudo preliminar de análise factorial confirmatória. *Psychologica, 41*, 171-191.

Dweck, C. S. (1999). *Self-theories: their role in motivation, personality, and achievement*. Philadelphia, PA: Psychology Press.

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95* (2), 256-273.

Elliott, E. S., & Dweck, C. S. (1988). Goals: an approach to motivation and achievement. *Journal of Personality and Social Psychology, 54*, 5-12.

Faria, L. (1990). *Concepções pessoais de inteligência*. Provas de aptidão pedagógica e capacidade científica. Porto: Faculdade de Psicologia e de Ciências da Educação da Universidade do Porto, Portugal.

Faria, L. (1996). Desenvolvimento intra-individual das concepções pessoais de inteligência durante a adolescência. *Revista Portuguesa de Psicologia, XXX* (1), 17-33.

Faria, L. (1998). *Desenvolvimento diferencial das concepções pessoais de inteligência durante a adolescência*. Fundação Calouste Gulbenkian e Junta Nacional de Investigação Científica e Tecnológica, Lisboa.

Faria, L. (2003). Escala de concepções pessoais de inteligência (E.C.P.I.). In M. M. Gonçalves, M. R. Simões, L. S. Almeida, and Machado, C. (Coords.), *Avaliação psicológica. Instrumentos validados para a população portuguesa* (vol. 1, pp. 131-144). Coimbra: Quarteto Editora.

Faria, L. (2006). Escala de concepções pessoais de inteligência (E.C.P.I.): Novos estudos. In M. M. Gonçalves, M. R. Simões, L. S. Almeida, and C. Machado (Coords.), *Avaliação psicológica. Instrumentos validados para a população portuguesa* (vol. 1, pp. 121-133, 2ª edição revista e actualizada com novos dados normativos). Coimbra: Quarteto Editora.

Faria, L., & Fontaine, A. M. (1997). Adolescents' personal conceptions of intelligence: the development of a new scale and some exploratory evidence. *European Journal of Psychology of Education, XII*, 51-62.

Faria, L., Pepi, A., & Alesi, M. (2004). Concepções pessoais de inteligência e auto-estima: que diferenças entre estudantes portugueses e italianos? *Análise Psicológica, XXII* (4), 43-60.

Fulmer, S. M., & Frijters, J. C. (2009). A review of self-report and alternative approaches in the measurement of student motivation. *Educational Psychological Review, 21*, 219-246.

Georgiou, S. (1995). Family dynamics and school achievement in Cyprus. *Journal of Child Psychology and Psychiatry, 56* (6), 977-991.

Grant, H., & Dweck, C. S. (2003). Clarifying achievement goals and their impact. *Journal of Personality and Social Psychology, 85*, 541-553.

Harrington, L., & Liu, J. H. (2002). Self-enhancement and attitudes toward high achievers. *Journal of Cross-Cultural Psychology, 33* (1), 37-55.

Heine, S. J., Kitayama, S., & Lehman, D. R. (2001). Cultural differences in self-evaluation. *Journal of Cross-Cultural Psychology, 32* (4), 434-443.

Hofstede, G. (1980). *Culture's consequences*. Beverly Hills, CA: Sage.

Kagitçibasi, Ç. (1994). A critical appraisal of individualism and collectivism: toward a new formulation. In U. Kim, H. C. Triandis, Ç. Kagitçibasi, S. S.

Choi, and G. Yoon (Coords.), Individualism and collectivism. Theory, method and applications (pp. 52-66). Thousand Oaks, CA.: Sage Publications, Inc.

Pepi, A., Faria, L., & Alesi, M. (2004). La rappresentazione dell'intelligenza e l'autostima: uno studio cross-culturale. *Ciclo Evolutivo e Disabilità, VII* (1), 31-48.

Pepi, A., Faria, L., & Alesi, M. (2007). La Scala delle Concezioni Personali dell'Intelligenza: un confronto tra le caratteristiche psicometriche della versione portoghese e di quella italiana. *Bollettino di Psicologia Applicata, 251*, 33-44.

Sampson, E. E. (1988). The debate on individualism: indigenous psychologies of the individual and their role in personal and social functioning. *American Psychologist, 43*, 15-22.

Santos, J. P., & Maia, J. (2003). Análise factorial confirmatória e validação preliminar de uma versão portuguesa da Escala de Auto-Estima de Rosenberg. *Psicologia: Teoria, Investigação e Prática, 2*, 253-268.

Triandis, H. C., Mccusker, C., & Hui, C. H. (1990). Multimethod probes of individualism and collectivism. *Journal of Personality and Social Psychology, 59* (5), 1006-1020.

Van De Vijver, F., & Hambleton, R. K. (1996). Translating tests: some practical guidelines. *European Psychologist, 1*, 89-99.