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The Friends and Family Interview: Measurement invariance across Belgium and Romania

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The Friends and Family Interview: Measurement invariance across Belgium and Romania

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The *Friends and Family Interview* (FFI; Steele & Steele, 2005), a semi-structured interview assessing attachment representations, is used in the context of an international research project. In the current study, the first step in the validation process of the FFI was to check whether this instrument measures coherence in the same way across countries. Coherence in attachment narratives is a central marker of secure and organized attachment representations in childhood and adulthood. Analysis were conducted on the data from Belgian ($n = 35$) and Romanian ($n = 43$) adopted adolescents and revealed that the FFI coherence is similar across the two samples. Correlations between coherence and attachment categories were also computed, confirming the relation between both these variables. Empirical implications of these analyses on the FFI are discussed.

Keywords: The Friends and Family Interview; Measurement invariance; Attachment interview; Adolescence; Attachment representations.

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The *Friends and Family Interview* (FFI; Steele & Steele, 2005) is a semi-structured interview assessing attachment representations in late childhood and adolescence. This measure is being used in the Attachment Adoption Adolescence Research Network (AAARN), an international project focusing on attachment representations in adopted adolescents and their parents (Molina, Ongari, Casonato, Mocatti, & Decarli, 2011; Stievenart & Wuyts, 2011). In order to compare the results from different countries, it is important to start the FFI validation process.

Coherence in attachment narratives is considered as an organizer of attachment experience including: reflections, evaluations, and redescriptions of these experiences at a metarepresentational level (Steele & Steele, 2005). Consequently, the first aim of the current study was to test the factor structure regarding coherence using the FFI on the Belgian and Romanian samples, checking whether the FFI measures this concept similarly across groups. Stated otherwise, the factor structure (i.e., factor loadings, and intercepts) should be identical over groups, this is called measurement invariance (e.g., Dimitrov, 2010; van de Schoot, Lugtig, & Hox, 2012). In addition, the relation between the latent coherence as provided by the factor structure analysis and the overall coherence item as provided by the FFI coding system (Steele, Steele, & Kris, 2009) was explored in order to confirm the validity of the latter.

Furthermore, many attachment studies have concluded that the coherence is a central marker of both security and organization in both childhood (e.g., Weinfield, Whaley, & Egeland, 2004) and adulthood (e.g., Hesse, 2008). While security has always been related to psychological adjustment (e.g., Sroufe, 2005), nowadays disorganization is also considered to play an important role in psychological well-being (Green & Goldwyn, 2002). Consequently, having determined the measurement invariance of coherence in the FFI, a second step consisted of the exploration of the relations between coherence and security and disorganization. Thus confirming that the construct of coherence is a central marker of attachment.

METHOD

Participants

Belgian ($n = 35$) and Romanian ($n = 43$) adoptive adolescents took part in the AAARN project. Families were contacted by social services and adoption associations. Inclusion criteria were adolescents aged 10 to 16 years old, adopted before five years old, without any severe mental diseases. In the Belgian sample, girls ($n = 15$, 42.9%) had a mean age of 13.29 years

old ($SD = 1.87$). In the Romanian sample, girls ($n = 26$, 60.5%) had a mean age of 12.91 ($SD = 1.66$).

Instrument

The Friends and Family Interview (Steele & Steele, 2005). The FFI is a semi-structured interview for older children and adolescents exploring their attachment representations with significant attachment figures like best friend, siblings, and parents. This interview begins with a brief introduction explaining to the child what he or she will be asked. Then the interview consists of descriptions of the relationships with each attachment figure. The FFI is video-recorded and transcribed before being coded by trained coders, using a 7-point scale, from 1 to 4 including mid-points. Different items were provided by the FFI coding system (Steele et al., 2009). However, in the context of the current study, analyses focused on items referring to coherence, security and disorganization.

As the construct of coherence could be considered as a central marker of attachment, our analyses focused on the four items related to the coherence: quality (convincing evidence between specific memories and general evaluations); quantity (right amount of information); relation (relevance of the examples); and manner (appropriate level of attention, interest and collaboration). The Cronbach's alpha per country indicated that the internal consistency of these four items was satisfactory ($\alpha = .83$ for both countries). An additional score of overall coherence is also provided by the FFI coding system.

The items relating to security and disorganization were also used. A high score on security indicates that the person's narrative reflects flexibility, ease and ability to turn to others for support in case of distress. On the contrary, a high score on disorganization indicates that some lapses in monitoring or reasoning occur, as well as contradictory or incompatible strategies in the attachment narratives.

Statistical analysis

Before comparing the results across Belgium and Romania, it was important to ensure that the underlying structure was equal across countries. To this aim, a measurement invariance procedure as described in van de Schoot et al. (2012) was used to test for equality of factor loadings and intercepts across countries (see also Dimitrov, 2010). The first step was to specify the model (adequate structure) of the coherence, using the four items referring to this concept as provided by the FFI coding system, for each country separately using confirmative factor analyses (CFA; configural invariance). The second step was to check if the best fitting factor model was adequate

and equal across countries. This was verified by first testing whether the factor loadings were equal (metric invariance), and, second, by testing the intercepts. For simple interpretation of latent variable means and patterns of correlations across countries, both the factor loadings and intercepts should be similar in the two samples (scalar invariance). If measurement invariance were not supported, this would imply that one or more of the common factors have different meanings across Belgium and Romania, thus not allowing comparison between these countries. Then, having determined the measurement invariance of coherence, correlations were computed between the FFI coherence latent factor and the overall coherence item of the FFI coding system, as well as between the overall coherence item, and security and disorganization items.

Single and multiple group confirmatory factor analysis were analysed using the software Mplus 6.11 (Muthén & Munthén, 2010). Full information maximum likelihood estimation was used to deal with missing data (Enders & Bandalos, 2001). To assess model fit, we used the comparative fit index (*CFI*), Tucker–Lewis index (*TLI*), and the root mean square error of approximation (*RMSEA*). Cut-off values for fit were considered adequate if *CFI* and *TLI* values were > 0.90 and $RMSEA < .08$. The Bayesian information criterion (*BIC*) was used to compare competing models. A lower *BIC* indicates a better trade-off between model fit and model complexity.

RESULTS

The CFA model to be estimated is shown in Figure 1 and was analysed for the Belgian data set ($\chi^2 = 0.90$; $p = .64$; $CFI = 1.00$; $TLI = 1.00$; $RMSEA = .00$) and for the Romanian data set ($\chi^2 = 3.75$; $p = .15$;

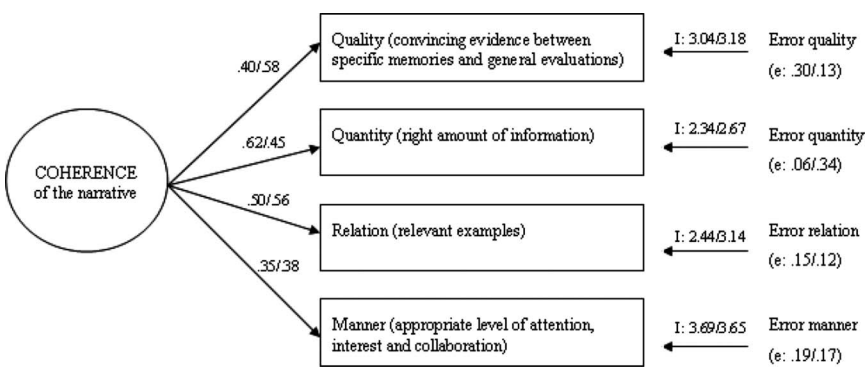

Figure 1. Factor structure of the FFI coherence latent factor for the Belgian and Italian samples, respectively.

$CFI = 0.97$; $TLI = 0.91$; $RMSEA = .14$), separately. The unconstrained parameters can be found in Figure 1.

In Table 1, the results of the search for measurement invariance are shown. Four models were tested. In model 1, intercepts were fixed, but the factor loadings were allowed to differ between the countries. In model 2, factor loadings were fixed, but the intercepts were allowed to vary between the countries. In model 3, factor loadings and intercepts were fixed indicating strong measurement invariance. It appeared that model 3 did not fit the data while model 2 did fit. However, when the intercepts were freely estimated (model 2), the factor means could not be compared since the underlying structure of the measurement model was no longer equivalent across countries. Therefore the intercepts were explored, revealing that the intercept of item 3 (relation) had the largest difference between the two countries ($\Delta\text{Intercept} = .70$). Then, a fourth model was estimated where only the intercept of item 3 was allowed to vary. Consequently, it appeared the *BIC* was lowest for this model indicating the best trade-off between model fit and model complexity. This supports moderate measurement invariance across samples allowing us to compare the countries. The mean difference between both countries was not significant ($\Delta M = 0.17$; $p = .21$) indicating that the FFI latent factor coherence is similar in Belgian and Romanian samples.

The correlation between the FFI latent factor coherence and the overall coherence item was then explored in order to confirm the validity of the latter. Very high significant correlations were obtained (Belgium: $r = .98$, $p < .01$; Romania: $r = .99$, $p < .01$). Moreover, correlations between the FFI latent factor coherence item and both security and disorganization items were computed to confirm that coherence was a central marker of attachment. Results highlighted significant relation between FFI latent factor item and security (Belgium: $r = .62$, $p < .01$; Romania: $r = .65$, $p < .01$) and disorganization (Belgium: $r = -.49$, $p < .01$; Romania: $r = -.59$, $p < .01$).

TABLE 1
Test of measurement invariance of the FFI coherence

	χ^2	*df*	*p*	*CFI*	*TLI*	*RMSEA*	*BIC*
Model 1: factor loadings free	32.49	8	.00	.78	.67	.28	595
Model 2: intercepts free	9.92	8	.27	.98	.97	.08	571
Model 3: factor loadings + intercepts fixed	41.43	12	.00	.73	.73	.25	584
Model 4: factor loadings + intercepts fixed except for intercept 3	16.43	11	.13	.95	.95	.11	564

DISCUSSION

The current study is the first one to determine measurement invariance of the FFI, focusing on the coherence in attachment narratives. It allowed the first cross-country comparison, which is an important issue within the AAARN, on the assessment of coherence. Our analysis confirmed the validity of the coherence assessment with no difference between Belgium and Romania. Only one item (i.e., relation) seems to vary across countries, thus underlying the need for a deeper definition of this item in the FFI coding system. In addition, in order to confirm the external validity of the FFI, future studies could also explore the relation between the FFI and other attachment measures.

Furthermore, the high correlation between the FFI coherence latent factor and the overall coherence item suggests that the latter could be used as a unique marker of this construct. This result questions the relevance of using the four items referred to specific aspects of coherence, instead of focusing on the overall score.

According with previous studies (e.g., Hesse, 2008; Weinfield et al., 2004), our results confirm that the coherence in attachment narrative is a good indicator of secure and organized attachment representations, illustrating by moderate correlations between FFI latent factor and security and disorganization in both samples. Further studies could explore the relation between security, disorganization and the psychological adjustment of adopted adolescents, which could be done within the context of AAARN.

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