

## Cross-Informant Ratings of Internalizing and Externalizing Behavior in Adolescent–Parent Pairs in Six Countries. Does Being Adopted Make a Difference?

Isabelle Roskam  
University of Louvain

Anja van der Voort and Femmie Juffer  
Leiden University

Marie Stievenart  
Université de Liège

Michel Bader  
SUPEA – Lausanne University

Ana Muntean  
West University of Timisoara

Maria Josefina Escobar  
Universidad Adolfo Ibañez

Maria Pia Santelices  
Pontificia Universidad Católica de Chile

Paola Molina and Marta Casonato  
Università degli studi di Torino

Barbara Ongari  
Università degli studi di Trento

Blaise Pierrehumbert  
SUPEA – Lausanne University

Low agreement between self-reports and parent reports of the behavioral adjustment of adolescents has been widely documented in the literature. However, it has been little studied in connection with adoptees. In the current research, the magnitude of agreement between reports of adolescents' behavioral problems given by the adolescents themselves and their parents and the direction of the possible discrepancies between these reports were studied. A comparison was made between adopted and nonadopted adolescent–parent dyads. The research questions were tested on a sample of 294 adolescent–parent pairs (189 adoptees and 105 controls) from Belgium, Romania, Chile, Switzerland, Italy, and the Netherlands. Correlation analyses together with Fisher R to Z comparisons between countries and between adopted and nonadopted dyads and Repeated Measures Analyses revealed that both the magnitude of agreement and the direction of the discrepancies in internalizing and externalizing behavioral ratings between informants, that is, parents and their adolescent, did not depend on whether the adolescents were adopted or not. Compared with their parents, both adopted and control adolescents reported problems more frequently. Some variations in the magnitude of agreement were found between countries. An interaction effect

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Isabelle Roskam, Psychological Sciences Research Institute, University of Louvain; Anja van der Voort and Femmie Juffer, Centre for Child & Family Studies, Leiden University; Marie Stievenart, Faculté de Psychologie, Logopédie et Sciences de l'Éducation, Université de Liège; Michel Bader, Faculté de Biologie et Médecine, SUPEA – Lausanne University; Ana Muntean, Social Work Department, West University of Timisoara; Maria Josefina Escobar, School of Psychology, Universidad Adolfo Ibañez; Maria Pia Santelices, Escuela de Psicología, Pontificia Universidad Católica de

Chile; Paola Molina and Marta Casonato, Dipartimento di Psicologia, Università degli studi di Torino; Barbara Ongari, Dipartimento di Sociologia e Ricerca Sociale, Università degli studi di Trento; Blaise Pierrehumbert, Unité de recherche du Service Universitaire de Psychiatrie de l'Enfant et de l'Adolescent (SUPEA), Lausanne University.

Correspondence concerning this article should be addressed to Isabelle Roskam, Psychological Sciences Research Institute, Université Catholique de Louvain, 10 Place du Cardinal Mercier, 1348 Louvain-la-Neuve, Belgium. E-mail: [isabelle.roskam@uclouvain.be](mailto:isabelle.roskam@uclouvain.be)

between gender and informant indicated that discrepancies for internalizing behavior were higher in parent–adolescent daughter pairs than in parent–adolescent son pairs.

*Keywords:* informant discrepancy, externalizing and internalizing problems, adolescence, adoption

Modest agreement between self-reports and parent reports of adolescents' behavioral adjustment has been widely documented in the literature. It has been pointed to as one of the most robust phenomena in clinical child research across cultures (De Los Reyes & Kazdin, 2005; Rescorla et al., 2013). This phenomenon has been interpreted according to meaningful contextual variation in adolescents' mental health concerns but also to what has been called "informants' reporting biases" (De Los Reyes & Kazdin, 2005). These biases designate informants' interpretation of similar behaviors in different ways or their subjective interpretation of an ambiguous and complex reality. In particular, parents and adolescents could have different ways of describing maladjustment in youth (Breland-Noble & Weller, 2012). Does being adopted make a difference with regard to the agreement between self- and parent reports? This phenomenon has actually never been studied in connection with adopted adolescents. However, this question needs to be addressed because of possible specific informant biases in this population which could maximize discrepancies between parent- and adolescent-reports or even change their direction. First, it is proposed that adoptive parents pay greater attention to the symptoms of their adopted child, whom they consider to be at greater risk than biological offspring (Juffer & van IJzendoorn, 2005; Warren, 1992; Weinberg, Waldman, van Dulmen, & Scarr, 2004). Second, it has been suggested that adoptees who have incurred affective deprivation early in life may be diminished in their conscious self-perceptions and therefore in the extent to which they admit or deny problematic behaviors (Fall, Roaten, & Eberts, 2012; Norvell & Guy, 1977). The possible hyper vigilance of the parents on the one hand and the adolescents' self-perceptions on the other could have an effect on the magnitude of agreement or the direction of the discrepancies within adopted adolescent–parent dyads. The aim of the current study was therefore to specifically test the magnitude of agreement and

the direction of the discrepancies within adopted adolescent–parent dyads compared with control dyads. The magnitude of agreement and the direction of the discrepancies were secondarily tested on sample data from six countries participating in the AAARN Research Network (Belgium, Romania, Chile, Switzerland, Italy, and the Netherlands), in order to test the generalizability of the findings across different cultures.

### The Magnitude of Agreement Within Adolescent–Parent Dyads

Two meta-analyses by Achenbach, Edelbrock, and Howell (1987) and Renk and Phares (2004) have situated the mean agreement, corresponding to a weighted mean effect size (Rosenthal, 1991), at .20 to .25 among parent–child informants (Achenbach et al., 1987; Renk & Phares, 2004). Numerous studies have corroborated the modest levels of agreement between these informants in different countries (De Los Reyes & Kazdin, 2005; Rescorla et al., 2013), with variations due to differences in cultural values. It has been suggested that familism, that is, prioritizing one's family over oneself (Schwartz, 2007), is associated with higher agreement between adolescents' and parents' reports (Rescorla et al., 2013).

The magnitude of agreement within adolescent–parent dyads has been studied among adolescents referred for mental health problems in comparison with controls using bivariate correlations ( $r$ ) and intra class correlations (ICCs). The key difference is that in ICCs, data are centered and scaled using a pooled mean and standard deviation, whereas in bivariate correlations each variable is centered and scaled using its own mean and standard deviation (Howell, 2009). Although this could impede direct comparisons between the results of previous studies, numerous empirical findings from different societies give support to a low to moderate agreement between parents' and adolescents' reports of adolescents' behavioral

problems using the Achenbach System of Empirically Based Assessment (Achenbach & Rescorla, 2004; De Los Reyes & Kazdin, 2005; Rescorla et al., 2013). This is based on the two higher-order domains of internalizing and externalizing behaviors corresponding to the model of general psychopathology (Achenbach, 1966; Widiger & Simonsen, 2005). Internalizing behaviors are negative behaviors that are directed toward the self such as depression or anxiety, whereas externalizing behaviors are negative behaviors that are directed toward others such as aggressiveness or opposition.

With regard to studies in community samples where adolescent-parent dyads were recruited at the community level (Turner, 2013), correlations of  $r = .28$  to  $.53$  for internalizing behavior and of  $.25$  to  $.53$  for externalizing behavior were found in two Dutch community samples of parent-adolescent dyads (Ferdinand, van der Ende, & Verhulst, 2004; van der Ende & Verhulst, 2005). The level of agreement was substantial among Algerian pairs, with ICCs of  $.59$  for internalizing behavior and  $.55$  for externalizing behavior (Petot, Rescorla, & Petot, 2011). Among Anglo-Celtic and Chinese 10-to-13-year-old children in Australia, levels of agreement were lower, with ICCs of  $.01$  to  $.21$  for internalizing behavior and  $-.04$  to  $.33$  for externalizing behavior (Wong, Jenvey, & Lill, 2012). A mean association of  $r = .31$  (range  $-.09$  to  $.56$ ) was found in African American adolescent-parent dyads (Breland-Noble & Weller, 2012). A comparable correlation of  $.37$  was displayed for Turkish adolescent-mother pairs for emotion regulation difficulties (Sarıtaş & Gençöz, 2012). Recently, inter correlations from 25 countries have been published, with  $rs$  varying from  $.17$  to  $.58$  obtained by averaging the  $rs$  between parent and adolescent reports for all problems (Rescorla et al., 2013).

Similar moderate associations have been found in adolescent-parent pairs in samples where participants were selected for specific characteristics at the individual level. For example, in a Norwegian sample of adolescents who had been clinically referred for emotional and behavioral disorders, correlation coefficients of  $.34$  and  $.41$  were reported between mothers' and adolescents' assessments of internalizing behavior and externalizing behavior (Berg-Nielsen, Vika, & Dahl, 2003). The same was true in two German studies conducted with

adolescents suffering from psychiatric disorders, in which there were ICCs of  $.23$  to  $.24$  for internalizing behavior and  $.45$  to  $.51$  for externalizing behavior (Salbach-Andrae, Klinkowski, Lenz, & Lehmkuhl, 2009), and  $.39$  for internalizing behavior and  $.60$  for externalizing behavior (Salbach-Andrae, Lenz, & Lehmkuhl, 2009), respectively. A recent Spanish study conducted with outpatients of mental health services for adolescents confirmed low to moderate ICCs ranging from  $.29$  to  $.41$  for internalizing behavior syndrome scales and from  $.25$  to  $.43$  for externalizing behavior syndrome scales (Lacalle, Ezpeleta, & Doménech, 2012). Also in a Dutch sample of outpatients of a psychiatry clinic, correlations ranged between  $.40$  and  $.70$  for internalizing behavior scales and between  $.58$  and  $.67$  for externalizing behavior scales (Ferdinand, van der Ende, & Verhulst, 2006). For American adolescents placed in out-of-home settings, the agreement was moderate among the adolescent-mother pairs, with  $r = .34$  for internalizing behavior and  $.25$  for externalizing behavior, but low among the adolescent-father pairs, with  $r = .19$  for internalizing behavior and  $r = -.16$  for externalizing behavior (Handwerk, Larzelere, Soper, & Friman, 1999).

Far less research has been conducted among adoptees. Self-reported and parent-reported problems of internationally adopted adolescents have been examined by Versluis-den Bieman and Verhulst (1995). The aim of this study, however, was to estimate the prevalence of behavioral problems among adoptees rather than to focus on cross informant agreement.

In sum, the magnitude of agreement in adolescent-parent pairs is characterized by low to moderate coefficients, with slight variations according to the country under consideration and to the status of the adolescents, that is, control or referred. In the present study, a moderate mean agreement between the two informants was therefore expected in adopted adolescent-adoptive parent dyads. However, it was hypothesized that the two possible specific informant biases, that is, impairment of conscious self-perceptions of adopted adolescents and hyper vigilance of adoptive parents, might be responsible for lower agreement in adopted adolescent-adoptive parent dyads compared with controls. Based on previous studies, slight variations were also expected across countries.

### The Direction of the Discrepancies Within Adolescent–Parent Dyads

Typically, adolescents from community samples report higher levels of problems than their parents (Rescorla et al., 2007). This is the case across countries (Rescorla et al., 2013). For example, in an Australian study, mean differences between parent and youth informants of Chinese and Anglo-Celtic samples were all positive and significant for both the internalizing behavior and externalizing behavior scales (Wong et al., 2012). Similar findings have been reported for Turkish adolescent–mother pairs with regard to emotion regulation problems (Sarıtaş & Gençöz, 2012), for Algerian adolescent–parent pairs for both internalizing behavior and externalizing behavior (Petot et al., 2011), and for Dutch adolescent–parent pairs (Van der Ende & Verhulst, 2005).

The contrary has been observed for referred adolescents. The discrepancy scores found in a Norwegian sample of clinically referred adolescents for both internalizing behavior and externalizing behavior suggested that the parents reported more behavioral problems than the adolescents did (Berg-Nielsen et al., 2003). The same result was shown in two German studies where, on average, parents reported more problems than the adolescents (Salbach-Andrae, Klinkowski, et al., 2009; Salbach-Andrae, Lenz, et al., 2009) as well as in a Dutch study (Ferdinand et al., 2006). A similar observation was made for adolescents in out-of-home psychiatric settings in the United States: in this case, parents' reports of internalizing behavior and externalizing behavior were significantly higher than adolescents' self-reports (Handwerk et al., 1999).

In sum, with regard to the direction of the discrepancies in adolescent–parent pairs, results found in different societies showed that adolescents report more problems than their parents in community samples, but parents report more problems than adolescents in referred samples. As suggested, typically developing adolescents may be less likely to share their concerns with their parents, who seem to some extent to be unaware of their adolescents' behavioral problems (Ferdinand et al., 2004). Conversely, parents who made the decision to refer their adolescent for behavioral concerns were likely to report more problems than their offspring. The interpretation of the di-

rection of the discrepancies remains problematic, however, because of the absence of a real benchmark. Where parents report more behavioral problems than the adolescent, the adolescent may be denying these problems or the parents may be overestimating the problems. Where adolescents report more problems than their parents, the parents may be unaware of these problems or the adolescents may be overestimating their own difficulties (Ferdinand et al., 2004).

Far less research is available with regard to the direction of the discrepancies between informants for adoptees. In a Dutch study considering self-reported and parent-reported problems of inter-country adopted and nonadopted control adolescents, significant variations were displayed according to the informant in the percentages of adopted and nonadopted adolescents in the clinical range of behavioral problems (Verluis-den Bieman & Verhulst, 1995). According to self-reports, 22% of the adopted adolescent boys and 18% of the adopted girls showed behavior problems in the clinical range compared with 10% of the participants from the general population. According to parents' reports, the difference between the two groups, that is, adoptees and controls, was slightly greater. Based on this previous study and the specific informant biases, in particular the propensity of adoptive parents to refer their adolescents for mental health concerns (Juffer & van IJzendoorn, 2005), adoptive parents were expected to report more behavioral problems than adopted adolescents. Conversely, control adolescents were expected to report more behavioral problems than their parents. This direction of discrepancies was expected to be generalized across countries.

## Method

### Sample

This study is part of the AAARN Research Network. Data were collected from 784 11-to-16-year-old adolescents and, predominantly, their mother; 309 of the adolescents were adopted and 476 were control participants. For the current study, the participants filled out a questionnaire that concerned the behavior of the adolescent. The distribution of adopted adolescents and control participants across countries is presented in Table 1. Descriptive statistics for the two subsamples are displayed in Table 2.

Table 1  
*Distribution of Adopted Adolescents and Control Participants Across Countries*

Countries	Total sample		Sample with adjusted sample sizes	
	Adoptees ( <i>n</i> = 309)	Controls ( <i>n</i> = 476)	Adoptees ( <i>n</i> = 189)	Controls ( <i>n</i> = 104)
The Netherlands	163	0	43	0
Romania	43	0	43	0
Belgium	39	29	39	29
Chile	24	24	24	23
Switzerland	16	414	16	43
Italy	24	9	24	9

For adoptees, the inclusion criteria were that they were aged 11 to 16 years old, that they knew they had been adopted, and that they had been adopted before the age of seven years. This last criterion was used for homogeneity purposes as well as to focus on adolescents who had experienced a maximum of 84 months of early attachment deprivation in order to avoid extremely serious situations. This age criterion was also important for parents to make proper reports, that is, adolescents had to live with their adoptive parents for at least four years. For 99 of the adoptive parents (valid percentage 34.9%), the parents had adopted a child for personal reasons other than infertility, while for 185 parents (valid percentage 65.1%) the adoption was due to infertility concerns. This information was missing for 25 families. Prior to their adoption, most children had lived in institutions that provided them with ade-

quate physical resources but not consistent, responsive caregiving. The age of adoption, that is, the number of months spent in the country of origin, ranged from 0 to 84 months ( $M = 11.85$ ,  $SD = 17.06$ ). The adopted children of Chile and Romania were domestic adoptees; all other adopted children were adopted internationally. The adopted adolescents came from 16 different countries, including Sri Lanka, Romania, and South Korea. Control participants were recruited in Switzerland ( $N = 414$ ), Belgium ( $N = 29$ ), Chile ( $N = 24$ ), and Italy ( $N = 9$ ).

### Data Collection Procedure

As the AAARN study was a multicenter research, approval process was made according to local standards in each country and not by one particular university. Common ethical guide-

Table 2  
*Descriptive Statistics for the Total and Adjusted Sample of Adopted Adolescents and Control Participants*

Socio-demographics	Total sample		Sample with adjusted sample sizes	
	Adoptees ( <i>n</i> = 309)	Controls ( <i>n</i> = 475)	Adoptees ( <i>n</i> = 189)	Controls ( <i>n</i> = 104)
Mean age ( <i>SD</i> )	14.06 (1.53)	13.53 (1.48)	13.50 (1.68)	13.28 (1.66)
Gender	47.9% boys	51.4% boys	50.3%	55.8%
Mother's educational level (%)				
Primary school	13.6	6.9	8	1.9
Secondary school	29.5	48.3	33	31.7
Undergraduate school	30.8	18.7	30.3	27.9
Graduate school	22.5	24.2	22.9	29.8
Post-graduate school	3.6	1.9	5.9	8.7
Marital status (%)				
Parents living together	83.9	78.9	83	76.5
Parents separated	16.1	21.1	17	23.5



lines were however followed throughout the study in each country and all participants gave informed consent before their inclusion in the study. In the Netherlands, the questionnaires on behavior problems were completed as part of a longitudinal adoption study in which internationally adopted children were followed from infancy to adolescence (Beijersbergen, Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2012; Jaffari-Bimmel, Juffer, van IJzendoorn, Bakermans-Kranenburg, & Mooijaart, 2006). At the start of the study, adoptive families were randomly recruited through Dutch adoption organizations. At seven years of age an additional group of adopted children ( $N = 14$  in the current study) matched on the original criteria were randomly recruited from one adoption agency (Stams, Juffer, Rispen, & Hoksbergen, 2000). In adolescence, the adoptive families were visited at home. The Romanian data were collected with the collaboration of the governmental adoption service. Cooperation agreements were established with nine of the 47 Romanian counties. The families who were willing to participate were then contacted by the research team for a meeting that took place at home or at the child protection service (37.20%). Belgian families were informed about the research project by social networks or by word of mouth. All the families that voluntarily contacted the research team were included and visited the parents and adolescents at home. Chilean families were recruited from the registry of adoptions at three state agencies authorized to conduct adoptions in Chile: "SENAME" (National Youth Service), "Fundación Chilena para la Adopción," and "Fundación San José para la Adopción." The families who were willing to participate were then contacted by the research team. The Chilean control group was specifically contacted in order to be able to match the two groups by socioeconomic level, age, gender, and educational level of the adolescent. Through social networks (Facebook groups, chain letters) the specific data needed to match the data with adopted adolescents (gender, age, educational level, and socioeconomic level) were published. The completion of the questionnaires was organized at home. The initial Swiss pool was the entire population of school-age children and adolescents from a French-speaking Swiss town (Morges) selected for its representativeness in terms of socioeconomic distribution according

to a comparison between responding families (the study sample) and the general population on two variables: origin and SES. This information was provided by the parents themselves (study sample) and by the Swiss census (for the general population). Parents were contacted by post, the addresses being provided by the school board. Parents received a questionnaire and those who agreed to participate sent the questionnaire back by post. Adolescents received and filled out the questionnaire in their classrooms during school time. They were free to complete it or to note that they did not wish to participate. Parents and adolescents thus filled out the questionnaires independently of each other. When parents refused to participate, the corresponding adolescent's questionnaire was discarded. Of the 430 adolescents, 16 were adopted. In contrast to adoptees from the other countries in the current study, they were not recruited because of their adopted status. In Italy, data were collected in two different regions in the north of the country, Piedmont and Trentino. Adoptive families were recruited with the help of adoption services, which directly contacted the eligible families and asked if they were willing to participate. Once researchers had made contact with a family, data collection was carried out at home or at the Psychology Department (20%). Control families were recruited with the help of schools in Piedmont. The procedure was the same as the procedure for the adoptive families.

## Instruments

The behavioral problems of the adolescents were assessed by the parent. In most cases the questionnaire was completed by the mother, but the possibility cannot be excluded that the father was present or completed the form on his own. The externalizing and internalizing scales of the Child Behavior Checklist (CBCL) covering ages 6–18 years were used. The adolescents also completed the Youth Self-Report (YSR) form, which can be used for ages 11 and up (Achenbach & Rescorla, 2001, 2004). Externalizing items were in the form of "Disobedient at home" for the CBCL or "I disobey at home" for YSR. Internalizing items were in the form of "Feels worthless or inferior" for the CBCL or "I feel worthless or inferior" for YSR. Based on translations or materials available to each re-

search team, the different countries used different versions of the CBCL and YSR. Belgium, Italy, and Romania used the 2001 version, and the Netherlands, Switzerland, and Chile the 1991 version. The externalizing behavior scale encompasses 33 and 35 items for the CBCL and 30 and 32 for the YSR, for the old and new version respectively. The internalizing behavior scale encompasses 31 and 32 items for the CBCL and 31 and 31 for the YSR, for the old and new version, respectively. The response format is as follows: 0 = *not true*, 1 = *somewhat true*, and 2 = *very true*. In order to deal with differences in the number of items according to the version and the informant, the internalizing and externalizing scales were calculated based on overlapping items of the different versions (internalizing 30 items; externalizing 29 items) and averaged. In other words, we used the 2001 scales for the CBCL and YSR and only removed those items that were different for the several editions and/or for the different reporters. For the YSR we excluded one and three items respectively for the internalizing and externalizing scale. For the CBCL we excluded two and six items respectively for the internalizing and externalizing scale. The mean scale scores for internalizing behavior ranged from 0.00 to 1.60 and .00 to 1.23 for the adolescent report and mother report, respectively. The mean scale scores for externalizing behavior ranged from 0.00 to 1.72 and 0.00 to 1.48 for the adolescent report and mother report, respectively. Because testing scale invariance across countries was beyond the scope of this paper, we calculated scale reliability. Scale reliabilities estimated from cross-scales in the total sample across countries are presented in Table 3.

## Data Analysis

In order to address the imbalance of the sample sizes, we created a new, more balanced, adjusted dataset in which 43 randomly chosen controls from Switzerland were included (instead of 414) and 43 randomly chosen adoptees from the Netherlands (instead of 163). The number of participants was the same as the number of the third largest sample (Romania). Also, one respondent from Chile had a lot of missing data on the Youth Self Report and was therefore removed from the central analyses. For descriptive information see Table 1. All central analyses were performed on this adjusted, more balanced dataset. Because the externalizing and internalizing scales were not distributed normally, that is, they were positively skewed, a transformation was required. A Box Cox syntax computed by the Statistical Methodology and Computing Service (SMCS) at the University of Louvain was used to explore the transformations that fitted the main variables the best. A similar transformation with a lambda exponent of .35 was performed on all problem behavior variables.

In order to investigate the nature of the hierarchical nesting in our data (participants nested in dyads nested in countries), we assessed ICCs based on three-level random intercept models without predictors, using the MIXED procedure in SPSS version 23 (IBM, 2015). The between-dyad effect accounted for 26% of the total variance in externalizing behavior and 31% of the variance in internalizing behavior. The effect of country of adoption accounted for no more than 0.1% of the variance in externalizing behavior and no more than 0.3% in internalizing behavior. In addition, sample size at the country level

Table 3  
Scale Reliabilities Across Countries

Countries	CBCL		YSR	
	Internalizing scale	Externalizing scale	Internalizing scale	Externalizing scale
The Netherlands	.87	.93	.93	.85
Romania	.78	.92	.80	.82
Belgium	.79	.81	.87	.87
Chile	.89	.90	.80	.85
Switzerland	.84	.84	.85	.88
Italy	.88	.90	.91	.89

Note. CBCL = Child Behavior Checklist; YSR = Youth Self-Report.

was small ( $N = 6$ ). This made it unnecessary to estimate a three-level model for these data, and we focused on the dependent structure of the behavioral scores, using a repeated-measures ANOVA, which is comparable to a mixed procedure when country of adoption is left out as a level.

First, bivariate correlations were computed in order to estimate the magnitude of agreement between parents and adolescents. This way we could assess whether reports of relatively high problem behavior by the adolescents were accompanied by relatively high reports of parents, regardless of mean level differences. These correlations were calculated separately for the different countries and for adoptive and control participants. Comparisons between coefficients were made using the Fisher  $r$ -to- $z$  transformation to calculate a  $z$ -value that could be applied to assess the two-tailed significance of the difference between two correlation coefficients,  $r_a$  and  $r_b$ , found in two independent samples. Second, the main statistical analysis was a repeated-measures ANOVA with internalizing and externalizing behavior as outcome variables. In a first step we entered informant (self-report vs. parent-report) as the within-subjects factor for all countries, including gender as a covariate. In a second step we also modeled adoptive status (adoptee vs. control) as a between-subjects factor but these analyses were only done for the countries that included a control group. Three- or more-way interactions were excluded in order to keep results interpretable. All analyses were repeated with country of adoption as an additional factor in the analysis in order to check the independence of our results on this variable. When

applicable, simple main effects analyses were performed to inspect interaction effects. Finally, we cross-checked our results on the total samples of Switzerland and the Netherlands.

## Results

### The Magnitude of Agreement Between Parents and Adolescents

In order to assess the magnitude of agreement between parents and their adolescents, we calculated the correlations between the CBCL and the YSR. These correlations are reported separately for the different countries and for the adopted and nonadopted adolescent-parent pairs in Table 4.

With regard to internalizing behavior, no significant differences in magnitude of agreement were found between countries or between adopted and nonadopted pairs within countries. With regard to externalizing behavior, a significant difference was found for adopted adolescent-parent pairs between Switzerland and the Netherlands,  $z = 1.97$ ,  $p = .048$ , and for control adolescent-parent pairs between Switzerland and Chile,  $z = 2.65$ ,  $p = .008$ . A significant within-country difference was found for Chile: the magnitude of agreement between control adolescent-parent pairs and adopted-adolescent pairs differed significantly,  $z = -2.60$ ,  $p = .009$ . The pooled results revealed a moderate level of agreement between adolescents and their parents. Overall, there was no significant difference in the pooled magnitude of agreement between adopted and nonadopted pairs on either internalizing (pooled results:  $z = -0.79$ ,

Table 4  
Correlations Between Parent Report and Self Report for the Adjusted Sample  
(Adopted:  $N = 189$ ; Controls:  $N = 104$ ) and the Separate Countries

Samples	Internalizing		Externalizing	
	Adoptees	Controls	Adoptees	Controls
Total adjusted sample	.38**	.46**	.37**	.48**
The Netherlands	.23		.55**	
Romania	.36*		.28*	
Belgium	.45**	.42*	.54**	.59**
Chile	.47*	.61**	.23	.78**
Switzerland	.23	.38*	-.01	.31**
Italy	.55**	.64	.47*	.24

\*  $p < .05$ . \*\*  $p < .01$ .



$p > .05$ ) or externalizing behavior (pooled results:  $z = -1.09, p > .05$ ).

### The Direction of the Discrepancies Between Adolescents and Parents

The descriptive statistics for internalizing and externalizing behavior according to informant and country are presented in Table 5.

**Effect of informant.** In the first set of repeated measures ANOVAs we tested informant as a within-subjects factor and included gender as covariate. For internalizing behavior, we found a significant interaction effect of informant and gender,  $F(1, 291) = 12.55, p < .001, \eta_p^2 = .041$ , as well as a significant main within-subjects effect of informant,  $F(1, 291) = 75.11, p < .001, \eta_p^2 = .205$ , and a significant main between-subjects effect of gender,  $F(1, 291) = 5.04, p = .026, \eta_p^2 = .017$ . These effects are represented in Figure 1.

The interaction between informant and gender indicated that adolescents reported more internalizing behavior problems than their parents and that this was especially the case for girls. In case of the YSR, girls reported more problems than boys. Adding country of adoption as a factor did not change these results. For externalizing behavior, we found a significant main within-subjects effect of informant,  $F(1, 291) = 97.84, p < .001, \eta_p^2 = .252$ . Ratings for self-report were higher than for mother-report. The model also showed a significant main effect of gender,  $F(1, 291) = 9.26, p = .003, \eta_p^2 = .031$ . Girls showed less externalizing problems than boys, and this effect was not different for self-report or mother-report. Adding country of

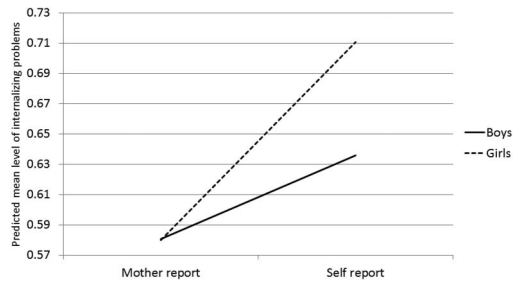


Figure 1. Interaction effect of informant and gender for internalizing behavior.

adoption as a factor did not change these results, although an interaction effect appeared that showed that the informant effect was not significant for Romania (simple main effect analysis:  $p = .814$ ).

**Effects of adoptive status.** In the second set of RM-ANOVAs, we added adoptive status as a between-subjects factor. The samples of the Netherlands and Romania were removed from the analyses because these countries did not include a control group.

For internalizing behavior, the interaction between and main effects of informant and gender were still present. We found no significant main effect for adoptive status,  $F(1, 204) = 2.49, p = .115, \eta_p^2 = .012$ , nor a significant interaction effect between adoptive status and informant,  $F(1, 204) = 1.15, p = .286, \eta_p^2 = .006$ . Adding country of adoption as factor did not change these results although an interaction effect revealed that the informant effect was not present in the Italian sample (simple main effect analysis:  $p = .134$ ).

Table 5  
Means for the Adjusted Sample (Adopted:  $N = 189$ ; Controls:  $N = 104$ ) and the Separate Countries

Samples	Internalizing				Externalizing			
	Adolescent		Parent		Adolescent		Parent	
	Adopted	Control	Adopted	Control	Adopted	Control	Adopted	Control
Pooled sample	.67 (.18)	.68 (.15)	.59 (.18)	.56 (.16)	.68 (.16)	.70 (.16)	.58 (.20)	.54 (.18)
Subsamples								
The Netherlands	.61 (.18)	—	.55 (.18)	—	.68 (.15)	—	.58 (.22)	—
Romania	.66 (.16)	—	.58 (.17)	—	.60 (.16)	—	.60 (.20)	—
Belgium	.72 (.17)	.66 (.13)	.57 (.15)	.52 (.16)	.75 (.15)	.67 (.12)	.62 (.16)	.55 (.14)
Chile	.66 (.18)	.66 (.15)	.60 (.19)	.55 (.22)	.65 (.15)	.65 (.20)	.59 (.23)	.57 (.24)
Switzerland	.69 (.17)	.70 (.17)	.63 (.17)	.60 (.14)	.72 (.12)	.77 (.13)	.52 (.17)	.53 (.19)
Italy	.70 (.23)	.62 (.08)	.66 (.19)	.57 (.13)	.68 (.16)	.60 (.12)	.55 (.18)	.51 (.11)

For externalizing behavior, the main effects of informant and gender were again present. However, no significant main effect for adoptive status,  $F(1, 204) = 1.405, p = .237, \eta_p^2 = .007$ , nor a significant interaction effect between adoptive status and informant,  $F(1, 204) = 1.76, p = .186, \eta_p^2 = .009$ , was found. Adding country of adoption as a factor did not change these results.

**Cross-check in complete samples.** To assess whether the informant effect was present in the complete samples of the Netherlands and Switzerland, we analyzed the mean differences between the YSR and the CBCL in these two complete databases. In both samples, internalizing behavior was higher in self-report than mother-report, and in both samples there was an interaction effect that showed that the informant effect was especially evident in girls. Both samples also showed a significant informant effect for externalizing behavior. Only the Netherlands revealed a significant interaction effect with gender in which the informant effect was only visible for girls.

## Discussion

The objective of the current study was to test the association between parents' reports and self-reports of adolescents' problem behavior in a sample with adopted and nonadopted adolescents and their mothers across six countries. The main finding of this research was the absence of an adoptive status effect either for the magnitude of agreement or for the direction of discrepancies between adolescents and their mothers. As a main conclusion, the current results suggest that what occurs in cross-informant rating of internalizing behavior and externalizing behavior is similar among adopted and control adolescent–mother dyads. Another main finding is that what occurs in cross-informant rating of internalizing and externalizing behavior can mostly be generalized across countries.

In particular, for the magnitude of agreement, we were able to confirm the hypothesis of low to moderate agreement between adolescents and their mothers, suggesting their subjective interpretation of an ambiguous and complex reality (Renk, 2005). Alongside this main result, we found slight variations in magnitude across countries, as has also been reported in previous

studies (Rescorla et al., 2013). However, these variations were limited to cross-informant rating of externalizing behavior and to two inter-country comparisons, one between Switzerland and Chile in control pairs, and the other between Switzerland and the Netherlands in adopted pairs. This limited number of significant variations can be explained by the fact that five out of the six participating countries were European and probably more similar than different in their cultural background. In-depth analysis of universal or culture-specific processes in cross-informant rating would need more diverse societies representing different cultural values. The difference in magnitude displayed between Switzerland and Chile in the control pairs could be interpreted with reference to cultural values: Chile is more Catholic and family oriented than Switzerland (Schwartz, 2007). The magnitude of agreement between adolescents' and their mothers' assessment of adolescents' behavioral problems may tend to be higher in a society where the family assumes a position of ascendance over individual interests than in a society where greater autonomy is promoted. However, the absence of differences between Chile and the other Western countries with a similar individualistic orientation to that of Switzerland may challenge such an interpretation. Chile was also the only country where a significant difference was found for externalizing behavior between control and adopted pairs, with higher agreement in control ones. Although isolated, this difference is in the expected direction, as we hypothesized that the two specific informant biases, that is, impairment of conscious self-perception of adopted adolescents and hyper vigilance of adoptive parents, may be responsible for higher disagreement in adopted adolescent-adoptive parent dyads compared with controls. The significant difference between Switzerland and the Netherlands does not seem explainable with reference to cultural values: these countries are both based on the Western concepts of freedom, liberalism, pluralism, tolerance, and secularization. The nil correlation found for Switzerland is puzzling. It means that what the adopted adolescents report about their externalized problems is not associated at all with what their mothers report. Such a result seems to be anomalous in comparison with the five other countries. However, we should keep

in mind that this correlation was only based on the sample of 16 Swiss dyads.

Regarding the direction of discrepancies, we were able to replicate the informant main effect for internalizing behavior and externalizing behavior that was previously found in community samples (Petot et al., 2011; Rescorla et al., 2013; Sarıtaş & Gençöz, 2012; Wong et al., 2012): adolescents reported more problems than their mothers, and this result can be generalized across countries. Contrary to our expectations, the direction of the discrepancies between informants does not seem to depend on whether adolescents are adopted or not. As in previous research conducted with community samples, adolescents reported higher rates of internalizing behavior and externalizing behavior than their parents. This is consistent with the view that adolescents could be less willing to share their concerns with their parents in a developmental period where they are trying to gain more autonomy. Their parents may therefore be less aware of their behavioral problems. By contrast with previous results (Versluis-den Bieman & Verhulst, 1995), the direction of the discrepancy was the same in adopted adolescent–adoptive parent dyads as in controls. Adopted adolescents also reported higher internalizing behavior and externalizing behavior than their parents. This may be due to the fact that the participants in the current study were recruited on a voluntary basis in the community. They were therefore probably more similar than different from typically developing adolescents. From a theoretical point of view, these results contradict the notion of specific informant biases among adoptees. In particular, they contradict the idea that adoptive parents pay greater attention to the symptoms of their adopted child, whom they would consider to be at greater risk than biological offspring (Juffer & van IJzendoorn, 2005; Weinberg et al., 2004). They also question the assumption that adoptees are impaired in their conscious self-perceptions and the extent to which they admit or deny their behavioral problems (Fall et al., 2012). Although informant biases may have been at work at the time of questionnaire completion, the present study suggests that these were not specific to the population under consideration. From a theoretical point of view also, our results add to the robustness of the phenomenon of a modest agreement between self-reports and

parent reports of adolescents' behavioral adjustment across cultures. Implications for policy and practice are that adoptive parent–adopted adolescent dyads have to be considered more similar than different from control dyads. As controls, adoptive parents and adopted adolescents have different ways of describing maladjustment in youth (Breland-Noble & Weller, 2012). Our results therefore stress the importance of a multi informant strategy for adolescents' behavioral assessment, for both adopted and nonadopted groups (Noordhof, Oldehinkel, Verhulst, & Ormel, 2008), as the discrepancies between adolescent–parent ratings have been shown to have clinical significance regarding psychopathology or family relationships (Breland-Noble & Weller, 2012; De Los Reyes & Kazdin, 2005; Ferdinand et al., 2004; Treutler & Epkins, 2003). For example, the presence of disagreement in parent–youth dyad reporting on adolescent behaviors and emotions, has been found to affect the presence of depression in youth (Breland-Noble & Weller, 2012).

Alongside these main conclusions, an interaction effect between informant and gender was reported for internalizing behavior which was seen to be more characteristic of girls. Discrepancies were higher in adolescent daughter–mother pairs than in adolescent son–mother pairs. Specific gender-related dynamics in mother–adolescent relationships could be responsible for this result. In particular, during adolescence, mother–daughter relationships can become especially conflicted over issues such as separation or differentiation (Collins & Russell, 1991; Russell & Saebel, 1997). In this context, the extent to which adolescent daughters are willing to share their concerns with their mothers may be more restricted compared with the sons (Collins & Russell, 1991; Russell & Saebel, 1997). This may result in less open communication and greater distance between mothers' and daughters' perspectives.

For externalizing behavior, we found no interaction effect between gender and informant of the kind found for internalizing behavior. We did find a main effect for gender that substantiates numerous previous studies (Bongers, Koot, van der Ende, & Verhulst, 2004; Deater-Deckard & Dodge, 1997): girls scored lower on externalizing behavior than boys. Also, we found that for Romania no informant effect for externalizing behavior was present. It may be

that domestically adopted adolescents from Romania are less inclined to admit their problems in this area than the adopted adolescents from other countries.

In sum, in a study with a good-sized sample of adolescent-parent pairs from six countries, we showed that both the magnitude of agreement and the direction of the discrepancies in internalizing behavior and externalizing behavior ratings between informants, that is, parents and their adolescent, does not depend on the adolescent's status, that is, adopted or non-adopted. Compared with their parents, both adopted and control adolescents reported problems more frequently. And these results can be generalized across countries. In the absence of a benchmark, however, it is impossible to determine which group made the more realistic assessment, or indeed if any of the informants under consideration were able to report behavior problems realistically.

Although important from both clinical and research perspectives, this study is by no means definitive. Several methodological shortcomings should be noted. A first important limitation relates to the data collection procedure used in each country. In some countries, such as Switzerland and Romania, the questionnaires were filled out completely independently by mothers and adolescents, excluding any mutual influence. This was less the case when the questionnaires were filled out during home visits, as was done for participants from Belgium and the Netherlands, for example. Such variations in the procedure could be responsible for variations in the magnitude of agreement between parents and adolescents, which was seen to be the lowest in Switzerland. Another variation in the procedure must also be noted. In Romania and Italy, families were met either at home or at an external location: the child protection service in Romania or the psychology department in Italy. The possibility cannot be completely ruled out that external factors such as social desirability influenced the questionnaire completion in different ways at the university, at the child protection service, or at home. The current study therefore needs to be replicated with highly standardized data collection procedures. A second limitation of this study is that the adoption was domestic for Chile and Romania, but international for the other countries. This variable was not controlled for. It may be that same- or

different-cultural backgrounds within the dyads influenced both the rate and the direction of the discrepancies, and this question should be addressed in future studies. The third limitation is the recruitment procedure, which considered adopted adolescents from a community sample only. In the future, the research questions should be tested among referred adoptees in order to study possible differences in the direction of the discrepancies. Fourth, adding country of adoption as a factor in the analyses revealed some differences between the variances of the different countries of adoption that were probably due to the difference in sample sizes. However, the results of the models with and without country of adoption were comparable. Fifth, the possibility cannot be excluded that a large part of the participants were self-selected, implying that they may not be similar to typically developing adolescents, and resulting in a possible bias in some subsamples. Sixth, in this paper we primarily focused on adopted adolescents and not on other age-groups. The period of adolescence may be particularly susceptible to differences between parents' and adolescents' reporting, because adolescents are becoming more and more independent and spending more and more time out of sight of their parents. Therefore, age-related variations should be considered in future investigations. Finally, as assessing the differences between countries was not our primary goal, we did not test the cross-country measurement invariance of the CBCL and the YSR scales. It may be the case that measurement variance across countries will have affected the comparability of our adolescents. However, the CBCL and YSR are widely used international instruments, and studies have shown that both instruments show satisfactory validity in several countries (e.g., de Groot, Koot, & Verhulst, 1996; Frigerio et al., 2004; Koot, Van Den Oord, Verhulst, & Boomsma, 1997; Leung et al., 2006) and generalizability of syndrome scales across nations (e.g., Ivanova, Achenbach, et al., 2007; Ivanova, Dobrea, et al., 2007; Rescorla et al., 2007). Despite these results, we should keep in mind that differences, and lack of differences between countries can be partly due to measurement variance. Also, there were no measures of cultural variables (such as familism, other cultural values, or child rearing practices) that may be related to behavioral issues. Moreover, the



data collection was limited to the countries participating in the AAARN Research Network. In light of these limitations, interpretations of the similarities or differences between countries remain speculative. Future attempts should also be made to replicate findings in diverse societies, with data collection encompassing cultural as well as behavioral variables. This could provide additional support to the generalizability of the main findings as well as theoretically based interpretations of variations found in the magnitude of agreement, and direction of discrepancies between adolescents' and parents' reports of adolescents' internalizing and externalizing behavior across cultures.

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