Quality of family context and cognitive development: A cross sectional and longitudinal study

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ABSTRACT
This study analyses the relationship between psychosocial quality of family context and the cognitive development of a sample of 551 children of school age. The data were gathered at school and at home in two waves, when the children were 5 (T1) and 8 (T2) years old, respectively. In T1, three factors related to quality of family context were obtained: absence of conflict, child–family adjustment, and sociability. Two factors of cognitive development were obtained in T1 and T2. In T1, associations were found between all three factors and cognitive development. In T2, associations were found between the quality of family context and cognitive development. Cognitive development in T2 was predicted by the absence of conflict T1 factor, with a negative association. Children who were exposed to more conflicts in T1, and who scored higher on the HOME scale in T2, were found to have improved their cognitive development scores over time in comparison with their group.

Keywords: family context; cognitive development; longitudinal research

The relationship between family context and children’s cognitive development has been widely studied, measuring the effect of diverse variables such as the family’s socioeconomic status, the social support received by the family during child rearing, the quality of the physical

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family environment and the materials provided by parents to stimulate development (Arranz et al., 2008; Wade, 2004). There is a positive close relationship between quality of family context and socioeconomic status (Bornstein & Bradley, 2003; Terrisse, Roberts, Palacio-Quintín, & MacDonald, 1998). The quality of non-parental care, combined with other family context variables has also been identified as a factor that influences cognitive development (Belsky, 2006; National Institute of Child Health and Human Development [NICHD], 2005). Researchers have also found a relationship between high levels of socioeconomic status and high levels of cognitive development (Bradley & Corwyn, 2002; Normand, Baillargeon, & Brousseau, 2007). The study conducted by Lugo-Gil and Tamis LeMonda (2008) of a low income sample of 2089 children and their families, showed that parenting quality mediated the effects of family resources on children’s performance at 24 and 36 months.

High scores on the HOME inventory developed by Caldwell and Bradley (1984) to assess the quality of the home environment, were associated with high scores in intelligence tests in children aged between 6 and 8 years (Baharudin & Luster, 1998) and higher levels of cognitive, linguistic, social and motor development in children aged between 4 and 6 years assessed using the Development and Maturity Inventory for Preschool Children (DMPI, Terrisse, & Dansereau, 1992). High scores on the HOME scale are also associated with more advanced cognitive development in children aged between 3 and 6 years, assessed using the Stanford-Binet scale (Espy, Molfeze, & Dilalla, 2001). This association was confirmed by the data obtained by the NICHD (2002), during an assessment of a group of children under the age of three years, using the Bailey Scale of Infant Development II (Bailey, 1993). In general, researchers have found a strong relationship between quality of family context and children’s cognitive development (Arranz, 2005; Bradley, Corwyn, Burchinal, Pipes McAdoo & García Coll, 2001; Grigorenko & Sternberg, 2001).

Other researchers have analysed the relationship between certain family context variables and specific cognitive skills: Bornstein, Haynes, Watson O’Reilly, and Painter (1996) identified symbolic play with the mother as a predictor of representational skills in 20-month-old children; Feldman and Greenbaum (1997) identified the quality and synchrony of mother–child interactions at the age of 3 and 9 months as predictors of symbolic abilities at the age of 2 years. The review carried out by Meadows (1996) documented the relationship between the quality of the scaffolding provided by parents and diverse cognitive abilities. The development of theory of mind is another of the cognitive abilities influenced by family context variables, such as the quality of attachment (Meins, Fernybough, Russell, & Clarke-Carter, 1998, and Arranz, Aramendi, Olabarrieta, & Martin, 2002), the quality of the mother–child relationship (Cahill, Deater-Deckard, Pike, & Hughes, 2007); the quality of sibling interactions (Ruffman, Perner, Naito, & Clements, 1998); and the use of a democratic parenting style (Pears & Moses, 2003). Academic performance, as a manifestation of cognitive development, has also been positively linked with family context variables (Cowan & Cowan, 2002, and Morrison & Cooney 2002). The work by Thompson & Williams (2006) analyses the relationship between family context variables and the development of meta cognitive abilities in children.

The vast majority of the studies carried out assess the quality of family context at a specific moment in time, analysing the influence of a specific variable, such as socioeconomic status (SES), on cognitive development. Furthermore, the assessments carried out when gathering data on family context in longitudinal studies covering two or more different moments in time tend to focus on the data at those specific moments, and fail to gather data retrospectively in order to determine whether or not certain variables have been constantly present over the established period. It is also significant that, while some family context variables (e.g. inter-partner conflict, parents’ stress and low social support) have been
associated with diverse problems in children, their influence on cognitive development has not been sufficiently researched.

In recent years, a number of other instruments have been developed to assess the quality of family context. One of these, the Developmental History (DH) scale of Pettit, Bates, and Dodge (1997), originated from an interview that assesses, from a developmental point of view, ecological factors such as the quality of non-parental care provided by the family, parents’ SES or the death of a relative. The scale also assesses some interactive factors such as parents’ use of punishment. It could be considered an inter-systemic evaluation of the quality of the family context, since its usefulness lies in identifying the external social and cultural ecological factors that may affect the quality of intra-family interactions and, therefore, the child’s psychological development. According to Pettit et al. (1997), supportive parenting, characterised by a low rate of conflict, good social support, adequate non-parental care, few stressors, a warm mother–child relationship and marked parental interest in education and inductive discipline, has a positive effect on psychological development and academic performance in children aged 5–11 years. Harsh parenting, characterised by the use of force, physical punishment, family stress and low SES among other factors, appears to be associated with a lower level of psychological development and academic performance and poorer adjustment to the school environment.

Using the DH, the assessment of family context including ecological-type variables enabled a rich analytic perspective within the framework of Bronfenbrenner’s ecological theory (2005). In the present study, the use of the Pettit et al. (1997) scale fulfills a two-fold purpose: (a) it constitutes a novel assessment of the quality of family context, obtaining data not only about one specific moment, but rather about a whole period; and (b) it analyses how cognitive development is influenced by contextual psychosocial variables such as conflict, the quality of non-parental care

and social support networks – variables that have not been sufficiently studied before in relation to cognitive development. The research team established two objectives in order to contribute something new to this field of knowledge:

1. The aim was to conduct an innovative assessment of the quality of family context, moving beyond the classical longitudinal design.
2. The purpose was to assess whether the negative impact of some family context variables on social development could also be identified in cognitive development. Of these, we mention non-parental care (Belsky, 2006) and conflict (Grych & Fincham, 2001).

**METHOD**

**Sample**

The study sample was obtained using a random representational sampling of the population of the Basque Country (Spain), conducted in accordance with the census of children born during 1995. The population studied enabled the authors to obtain representative proportions of gender, age (5, 8 years), and type of school. A total of 551 children and their families were assessed at T1 and 448 remained at T2: boys 54.3% and girls 45.7%. The mean age was 69.6 months with a standard deviation of +/- 3.5 (T1) and 93.28 months with a standard deviation of +/- 3.84 (T2). The age range was 64–78 months (T1) and 85–114 months (T2). The criteria used to determine SES included educational level, profession and income level; the total amount of family income and the educational and professional levels of both mother and father were labeled within a range from 1 (low) – 3 (high), building a range from 1–15 points: the score 0–3 points was low; 4–6 was middle to low; 7–9 was middle; 10–12 was middle to high and 13–15 was high (Bradley & Corwyn, 2002). Of the sample families, 20.1% were low status; 29.2% middle to low; 30.5% middle; 13.5% middle to high, and 6.7% high. In the sample, 94% of the families were intact. Attrition analyses found no
significant differences on any of the variables related to family context or cognitive development between those children and their families who participated in both waves (T1 and T2) and those who dropped out.

**Procedures**

Each interviewer contacted 40 families to arrange a date for the family interview, and scheduled the dates of the children's interviews directly with the schools. Interviewers met in groups of five to assess each interview, following the consensus agreement format proposed by Gilbert and Christensen (1985). The interviewers visited the families in their homes when the children were 5 and 8 years old (5 years: T1; 8 years: T2). Children were also interviewed at school at T1 and T2. Between T1 and T2, 18.6% of collaborating families were lost due to a number of different circumstances, such as a change of educational cycle, change of school or change of address; none of the families located for the second round of data gathering refused to collaborate.

**Measures**

Four measures were utilized: two to assess quality of family context and two to assess cognitive development.

**Quality of family context measures**

*Administered at T1*: The Developmental History (DH) scale developed by Pettit et al. (1997) was chosen, because this instrument is designed to collect information about the family context diachronically. It seemed more appropriate to obtain information regarding the family context throughout the child's life; information was registered over the period ranging from 0–5 years at T1. A careful analysis of the DH enabled the research team to verify that the interviewers would assess the diverse family context quality categories on the basis of objective and quantifiable records obtained during the parental interview, during which very little information would be gathered on the basis of subjective evaluations made by the parents themselves. The DH consists of a semi-structured interview using 36 questions. The interview is administered individually in the presence of both the parents and the child. It is designed for parents of school children and has a variable duration of approximately 1 hour. Interviewers assess the families on a scale of 1 (very poor) to 5 (very good) in relation to the following categories:

2. Conflict level both within and outside the home ($M=4.08$, $SD=.85$).
3. Impact of the child on the family: the family's adjustment to the baby, independently of other family stressors ($M=4.09$, $SD=.83$).
4. Quality of non-parental care: quality and consistency (time-wise) of the non-parental care provided ($M=3.66$, $SD=1.52$).
5. Peer stability: potential for friendship, stability and familiarity of the child's relationships with his/her peers ($M=3.95$, $SD=.83$).
6. Parents' expressed interest in their child's social development: involvement, efforts to encourage and monitor the child's relationship with his/her peers ($M=4.29$, $SD=.72$).
7. Punitive discipline: parents' use of physical punishments and severe disciplinary methods ($M=4.27$, $SD=.84$).
8. Physical harm: objective possibility that the child has suffered some form of physical harm from parents ($M=4.69$, $SD=.78$).
9. Conflict between partners: frequency, intensity and child's exposure to such conflicts ($M=4.31$, $SD=1.00$).
10. Other in-home conflicts: frequency, intensity and child's exposure to conflicts with other people; ex-spouse, siblings, other relations, home help ($M=4.47$, $SD=.90$). Exposure to conflict or violence outside the home: frequency, intensity and child's exposure to conflicts in the neighborhood, at school ($M=4.52$, $SD=.90$).
11. **Social contact**: parents’ perceptions of support and with a social network of family and friends during the rearing period ($M=3.53, SD=.99$).

12. **Stressors**: frequency and number of stressors during rearing, such as moving house, medical, legal or financial problems, death of a relative ($M=3.81, SD=1.20$).

13. **Parents’ sense of control**: ability to resolve and adapt positively to the challenges faced during child rearing ($M=4.18, SD=1.00$).

14. **Global assessment**: the sum of the scores obtained in each of the above categories ($M=50.28, SD=6.07$). Scores in categories 6, 7, 8, 9, 10, and 12 were reversed. The assessment of the quality of non-parental care (3) was excluded from this overall score, due to the high number of missing values and its low correlation with the other categories (from .01 – .14). The internal consistency of the total scale (excluding category 3) was alpha = .80.

Categories 1, 2 and 3 were scored using the data related to the first year of life, and categories 4 to 13 were scored from the data related to the period between 2 and 5 years, the age that children had at T1.

**Administered at T2**: The Home Scale (Caldwell & Bradley, 1984; Spanish version by Dr Moreno, University of Seville) was included at T2 in order to obtain a more exhaustive and updated measure of family context. The scale is an individually applied interview. It comprises 54 items. Each interviewer assessed the presence / absence of each item. The items are organised to measure the following areas:

- Verbal and emotional response ($M=6.78, SD=1.86$).
- Social maturity stimulation ($M=5.14, SD=1.20$).
- Emotional environment ($M=4.73, SD=1.72$).
- Experiences and material to improve development ($M=5.32, SD=1.30$).
- Active developmental stimulation ($M=5.98, SD=1.39$).
- Diversity of family experiences ($M=4.85, SD=1.16$).
- Father’s involvement ($M=3.59, SD=.75$).
- Home appearance ($M=6.16, SD=2.27$).
- Global assessment (sum of factors) ($M=43.31, SD=6.23$) (alpha=.73).

**Cognitive development measures**

**Administered at T1 and T2**: The Batelle Development Inventory (BDI; 1984; Spanish version, Batelle, 1989) is an individually administered measure for evaluating fundamental cognitive and language skills in children’s development from birth up to the age of 8 years; it has been standardised for the Spanish population. Information is obtained from the child through a structured test situation, in addition to reports by parents and teachers regarding specific items, and observation of the child in his/her natural environment. Cronbach’s alpha was .86 in T1 and .74 in T2.

**Administered at T1 and T2**: The Wechsler Intelligence Scale for Children (WISC, 1949, 2001) has been standardised for the Spanish population; the subscales comprehension and similarities are especially discriminating in the Spanish population and were applied in order to obtain an assessment of the application of cognitive abilities to everyday problems and situations, and to compare the results with those obtained using the cognitive subscale of the BDI.

**Results**

Results are reported in conjunction with the statistical analyses undertaken, in the first instance on factorial analyses. The influence of family context variables was then analysed from both a cross-sectional and a longitudinal perspective. Cross-sectional analyses involved tests of association at T1 between DH categories and cognitive development, and at T2 between DH categories and HOME scores. The longitudinal analysis utilised a hierarchical multiple regression analysis incorporating an autoregressive model as the fourth and final step.
Factorial analysis (T1 & T2)

Quality of family context

Principal component analysis (PCA) with Varimax rotation was carried out at T1, in order to reduce the number of variables referring to the quality of family context measured by the DH; category 3 was excluded due to the high number of missing subjects. Three factors were extracted; factorisation is preserved in those factors whose eigenvalues were >1. The factors were labeled as Absence of Conflict (Factor 1), Child–Family Adjustment (Factor 2) and Sociability (Factor 3). Factor scores were obtained by adding together the scores in categories clustered in each factor. Category 6 (use of punitive discipline) appeared to be associated with Factor 2; however, due to its low saturation in the factor (.29), it was excluded, since according to the criterion proposed by Stevens (1992), each item included must have a saturation of at least .40. Results are shown in Tables 1 and 2.

Cognitive development

Given the significant correlation (from .49 – .69) between the scores obtained in the tests used to assess cognitive development (similarities and comprehension, Wechsler scales, and cognitive and language, Batelle scales), two PCA were carried out. At T1, a single factor called Cognitive Development T1 was identified [KMO=0.678, Bartlett χ²(3)=347.03, p<.001], which explained 66.8% of the variance observed. A single factor was also obtained at T2 [KMO=0.642, Bartlett χ²(3)=151.08, p<.001], which explained 53% of the variance observed; this factor was called Cognitive Development T2. The scores for both factors were obtained from the mean of the scores in the 4 cognitive subscales using the same items at T1 and T2.

Cross-sectional analysis (T1 and T2)

T1 cross-sectional analysis

In order to test the cross-sectional association between the quality of family context and cognitive development at T1, correlation analyses were carried out. The factor Cognitive Development T1 presented significant associations with the following categories of the DH: General family situation, \( r(529)=.18, p=.000 \); Child’s impact on the family, \( r(530)=.21, p=.000 \); Quality of non-parental care, \( r(519)=.18, p=.000 \); Peer stability, \( r(523)=.13, p=.002 \); Parent’s interest in their child’s social development, \( r(526)=.10, p=.020 \); Punitive discipline, \( r(529)=.13, p=.002 \); Physical harm, \( r(526)=.11, p=.015 \); Conflicts between partners, \( r(527)=.09, p=.050 \); Other in-home conflicts, \( r(526)=.19, p=.000 \); Level of social contact, \( r(527)=.16, p=.000 \); Stressors, \( r(527)=.14, p=.001 \); Parent’s sense of control, \( r(526)=.20, p=.000 \).
Global assessment, $r(497) = .29, p = .000$. All categories showed significant correlations in the expected direction with the scores for cognitive development at Time 1.

Similarly, at T1, the Cognitive Development T1 factor showed significant correlations with SES and the three factors extracted from the DH: Absence of Conflict (Factor 1), Child–Family Adjustment (Factor 2) and Sociability (Factor 3). Thus, children from families with higher scores in the three factors and higher SES scored higher in cognitive development. The SES variable showed significant correlations with the three factors extracted from the DH. These data can be consulted in Table 3.

To further analyse the relationships among these variables, the influence of SES and the three subscales of the DH on the dependent variable cognitive development at T1 was analysed through multiple regression analyses. The Child–Family Adjustment and Absence of Conflict subscales explained significant variance in cognitive scores. After the inclusion of SES as a predictor, the Sociability factor failed to add significantly to the prediction of cognitive scores. SES was found to have a highly significant relationship with cognitive scores, even after the effect of the variables referring to family context assessed by the DH were controlled.

**T2 cross-sectional analysis**

The associations between quality of family context and cognitive development at T2 were analysed through correlation analyses between the scores in the HOME scales and Cognitive Development at T2. Correlations were significant with Parental Responsivity, $r(435) = .25, p = .000$; Encouraging Maturity, $r(434) = .20, p = .000$; Emotional Climate, $r(434) = .13, p = .007$; Family Participation, $r(434) = .14, p = .002$; Parental Involvement, $r(432) = .14, p = .004$; and the total HOME score, $r(428) = .25, p = .000$. All the correlations were in the expected direction. Correlations were not significant with Learning Materials, Active Stimulation and Physical Environment.

**Longitudinal analysis (T1 & T2)**

As shown in Table 3, there was a significant positive correlation between SES and the Cognitive Development at T2 factor. SES also presented a slightly significant positive correlation with the total score on the HOME T2 scale. The Cognitive Development at T2 factor showed significant correlations with both the Child–Family Adjustment and Sociability factors obtained from the DH at T1, and the Cognitive Development at T1 factor.

Taking into account the correlations between SES, cognitive development, total HOME score

### Table 3: Correlations among all study variables

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<th>4</th>
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<td>.10*</td>
<td>.25***</td>
<td>.60***</td>
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*** $p < .001$; ** $p < .01$; * $p < .05$. 

### Table 4: Regression model predicting Time 1 cognitive development ($N = 495$)

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<th>t</th>
<th>$R^2$</th>
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<td>Sociability</td>
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*** $p < .001$; ** $p < .01$; * $p < .05$. 

Enrique B Arranz, Alfredo Oliva, Manuel Sánchez de Miguel, Fernando Olabarrieta and Martin Richards
and the DH subscales, a hierarchical multiple regression was conducted to predict Cognitive Development at T2 (Table 5). In the first step, only SES was included as a predictor and presented a significant association with cognitive development. In the second step, the scores from the three subscales of the DH at T1 were included, and two of them, Absence of Conflict and Child–Family Adjustment, added significantly to the prediction of cognitive development at T2.

In the third step, the total HOME score was added as a predictive variable, with the predictive value of the equation increasing significantly, while the two subscales of the DH maintained their significance. It is important to highlight that the relationship between the Absence of Conflict factor and the Cognitive Development at T2 factor was negative. Thus, frequent conflicts at T1 were associated with higher cognitive scores 3 years later. The fact that this relationship does not appear to be significant (as the bivariate correlations shown in Table 3 indicate) is due to the masking influence of SES and the Child-Family Adjustment factor variables from the DH. When their effects were controlled in the multiple regression analysis, the relationship between conflict and cognitive development became statistically significant.

Finally, in the fourth step, an autoregressive model was used (Stoolmiller & Bank, 1995) including Cognitive Development at T1 as another predictor. Partialling out Time 1 dependent variable data from Time 2 dependent variable converts the Time 2 measure into a residual change variable. An individual’s residual score represents the change in rank for this individual from Time 1 to Time 2. The fact that the correlation between cognitive development at T1 and T2 was not particularly high (\( r = .60 \)), indicates a fairly low relative stability and, therefore, changes between both moments in the ranking of subjects according to the cognitive scores obtained. This is why

<table>
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<tr>
<th>Predictors</th>
<th>Beta</th>
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<th>( R^2 )</th>
<th>( R^2 ) Change</th>
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</table>

*** \( p < .001 \); ** \( p < .01 \); * \( p < .05 \).
it was deemed appropriate to carry out this type of analysis, something that would not have been possible with a higher relative stability level. In this autoregressive model, the Absence of Conflict at T1 factor and the total HOME score (T2) remained significant predictors, along with Cognitive Development at T1. On the other hand, the Child–Family Adjustment factor in the DH, which is associated with the absolute score in Cognitive Development at T2, was not related to the changes in these scores between T1 and T2. This result seems to indicate that it had already exercised its influence on cognitive development during the assessment carried out at age 5. Something similar could be said about SES, insofar as it failed to add significantly to the prediction of cognitive development at T2 when cognitive development at T1 was included as a predictor. It can therefore be affirmed that both the existence of conflicts at T1 and the high quality of family context at T2, as assessed by the HOME inventory, are associated with an increase in cognitive scores between T1 and T2.

**DISCUSSION**

Associations were found between children’s cognitive development and 12 of the 13 categories that comprised the Developmental History (DH). The regression analysis confirms the links between the factors obtained from the DH and cognitive development at T1, and also confirms the association between SES and cognitive development described in scientific literature. The three factors into which DH categories are grouped could be analysed under the perspective of the ecological theory (Bronfenbrenner & Morris, 1998; Brofrenbrenner, 2005). The Child–Family Adjustment factor, which covers those areas related to professional and economic stability and the absence of stressors in the family context, can be partially considered as an assessment of the exosystem and shows the strongest association with the child’s cognitive development. The factor has been termed Child–Family Adjustment because it assesses both the quality of the exosystem through categorisation 1 – General family situation – and categorisation 12 – Stressors – and its implications for the interactive aspects of the microsystem, as specified in categorisation 2 – Impact of the child in the family – and categorisation 13 – Parents’ sense of control. The Absence of Conflict factor, which assesses the microsystem or immediate developmental context, also showed a significant association with cognitive development. The relevance of low exposure to conflict as an indicator of the quality of family interaction has been extensively documented in scientific literature (Grych & Fincham, 2001). Finally, the Sociability factor, which refers to the relationship between two of the principal infant development microsystems (mesosystem), was also significantly associated with cognitive development.

At T2, the relationship between cognitive development and quality of family context, as assessed by the HOME scale, was found to be significant, even after SES and the three factors of the DH at T1 were controlled. These findings, as with many others, suggest that high quality of family context provides the interactive and stimulatory wealth that cognitive development requires. The influence of SES on cognitive development can be only partially accounted for through its associations with the quality of family context measures at T1 (DH) and T2 (HOME), since the regression analysis carried out indicated that there are a number of influences of SES on cognitive development that are independent of the quality of family context measures conducted in this study. The existence of these other influences, including decontextualisation, play, linguistic scaffolding, authoritative parenting, positive parental expectations, and quality of attachment (Arranz, 2005; Borkowsky, Landesman Ramey, & Bristol Power, 2002) may serve to explain the significant association found between high SES and more advanced cognitive development. It should also be stressed that SES establishes differences between families as regards their access to certain community services and their exposure to cogni-
tively enhancing experiences (Duncan & Brooks-Gunn, 1997). The data related to the association between SES and cognitive development is coherent with the findings exposed in the introduction of this paper; recent studies confirm the long-term effect of contextual variables of the family on cognitive development, educational level and professional level during adulthood (Rowell, Dubow, Eron, & Boxer, 2006).

The longitudinal analysis enabled the authors to study the impact of family context variables, measured at T1, on cognitive development at T2. In light of the results obtained in this study, it can be deduced that the interactive quality of family context, as measured at T1 by the DH for the ages 0 to 5 maintains its impact on cognitive development at T2. Two of the three DH factors: the Child–Family Adjustment factor and the Absence of Conflict factor, maintained a significant relationship with cognitive scores 3 years later. It is important to remember that the transversal relationship between the latter factor and cognitive development measured at the same moment (T1) was positive. In other words, the fewer the conflicts, the greater the cognitive development. However, the longitudinal relationship with the cognitive scores obtained 3 years later was exactly the opposite, since those children who had been exposed to a greater level of conflict at T1 obtained higher cognitive scores at T2.

The influence of cognitive development itself at T1 on cognitive development at T2 indicates a certain relative stability of the cognitive scores. However, this stability was not particularly high, indicating that between T1 and T2 changes occurred in the relative positions of the subjects with respect to their group. This may be interpreted to mean that some children improved cognitively while others grew worse. Therefore, the carrying out of a residual analysis, or autoregressive model, enabled us to identify which variables were involved in these cognitive changes. Thus, it seems that children exposed to more conflict at Time 1 who scored higher on the HOME scale at Time 2 improved the most as regards their cognitive development ranking between T1 and T2, in comparison with the rest of their group. Therefore, these two variables not only predict cognitive scores at T2, they also account for the change occurring in these scores between T1 and T2. The contribution of the total HOME score to cognitive change was as expected, since the HOME scale is a synchronic measure of the quality of family context, and a stimulating context is conducive to continuous improvement of cognitive development.

Somewhat more surprising is the relationship found between a greater level of conflict at T1 and both higher cognitive scores at T2 and an improvement in said scores between T1 and T2. One explanatory hypothesis may be that the conflicts grouped in the Absence of Conflict factor at T1 (conflicts between parents, with siblings and extended family and conflicts in the neighborhood and school) do not last and their possible adverse effect may become a stimulating experience for cognitive development within the framework of a good quality family context. This finding is not contradictory with the strong evidence linking the exposure to conflict with a negative cognitive performance. This hypothesis is based on the fact that 94% of the families in the sample were intact families; from this, it can be deduced that the conflict existing within these families at T1 did not increase so much as to result in parental rupture at T2.

The positive relationships between internal or intrapsychic conflict, socio-cognitive conflict and cognitive development have been analysed by developmental psychologists (Girotto, 1987; Uhlinger, Shantz & Hartup, 1992). Recent studies support the association between exposure to conflict and cognitive development (Druyan, 2001; Johnson & Johnson, 2009). In the case of the children in the study sample, exposure to different situations of conflict may have triggered an internal conflict that acted as an activator for cognitive development through the search for an understanding of the conflictive situation (Grych & Fincham, 2001; secondary processing). It may
be that exposure to conflict acted as an accelerator for overcoming the cognitive egocentrism that is characteristic of the age of 5, the age of the children at T1.

Some recent data support a positive effect of exposure to inter-parental conflict in the performance of cognitive and linguistic tasks (Margolin, 2005; Medina, Margolin, & Wilcox, 2000). The framework of understanding for this observation may be found in resilience behavior, which the children in the sample may have developed in response to their exposure to conflict at T1. Indeed, Kagan (1976) pointed out the possible relationship between resilient behavior and the activation of cognitive development. Subsequent studies support this association (Engle, Castle, & Menon, 1996; Masten, Best, & Garmezy, 1990). Of particular significance is the longitudinal study conducted by Hart, Keller, Edelstein and Hoffman (1998), which identified the ego-resiliency trait as a predictor factor for good social–cognitive development. For the children in the sample group of this study, exposure to conflict at T1 may have served to foster resilient behavior within the framework of an adequate family context. In current literature, studies exist that support the promotion of resilience as an accelerating factor for cognitive development in the school environment (Hall et al., 2009) and propose that it be fostered in the family environment (Lobo, 2008).

The present study contributes to the knowledge accumulated in this field by identifying the influence of psychosocial family context variables on cognitive development, particularly as regards a possible accelerator effect of exposure to conflict within the framework of an adequate family context. The study also has its limitations; for example, it uses an instrument, such as the DH, which, while providing relevant information, is nevertheless based on self-report techniques. Consequently, it is very important to be cautious when generalising the results to other populations. Future research should analyse in greater depth the interactive and contextual factors that may interact with a certain level of family conflict in order to turn the latter into a variable that accelerates the rate of cognitive development.

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