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Gender as predictor of social rejection: the mediating/moderating role of effortful control and parenting

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Abstract: The aim of this work was to analyze the gender differences found in a sample of 474 Spanish children aged between 6 and 8 years with respect to peer rejection using a sociometric status technique. Thus, we analyzed how temperament (Effort Control) and parenting practices (Parental support and Discipline) were involved in this relation. To measure social rejection we used the nominations method in the classroom context, while for temperament and parenting practices, parents were given a TMQ (Temperament in Middle Childhood Questionnaire; Simmonds and Rothbart, 2004) and the Spanish version of the PCRI (Parent-Child Relationship Inventory; Gerard, 1994). Using an statistical modeling approach, we tested various mediation/moderation models until the best one with selected variables was found to explain the relation between these variables. The results confirmed gender differences in social rejection, with boys being rejected more than girls. The model that gave the best fit was the one that placed effortful control latent variable mediating the relation between gender and social rejection and parenting practices as a latent explanatory variable of effortful control. In conclusion, differences between girls and boys in social rejection are to a large extent explained by the significantly lower scores for boys in effortful control construct and, in turn, these lower scores are explained by negative parental practices, with low levels of support and discipline.

Key words: social rejection; effortful control; parenting; mediation; moderation.

Introduction

Social rejection in school has relevant implications on children socio-emotional adjustment (Parker & Asher, 1987, for a review). High levels of social rejection have been associated with worse adjustment to the school environment (Ladd, 1990), greater presence of mental health problems (Rubin, Burwoski, & Parker, 2006), and a greater probability of internalizing (Bell-Dolan, Foster, & Smith-Christopher, 1995; Gazelle & Ladd, 2003) and externalizing problems appearance (Calkins & Dedmon, 2000; Zhou, Lengua, & Wang, 2008) in later stages. Therefore, it is necessary gain better insights of the variables that foster its appearance to ensure the children social adjust to their environment.

Sociometric techniques are the most widely method for evaluating children’s peer rejection in all contexts. However, the framework of classroom activities is the most commonly chosen because of its importance in child’s social life (Buhs, Ladd, & Herald, 2006), and because this context is relatively easy to extrapolate, especially with respect to rejection (Martin & Muñoz de Bustillo, 2009). As regards methodology, mediation and moderation models are the most used since they are highly effective explaining the effects that different variables exert on each other, as is borne out by a wealth of studies in Psychology (Hayes, 2013).

From this perspective, traditional studies in social rejection used sex as the explanatory moderator in the relation between rejection and other relevant variables (Chang, Olson, Sameroff, & Sexton, 2011). However, it is necessary to ascertain to what extent sex may be an explanatory variable of rejection, and once these are confirmed, analyze which other variables may be mediating or moderating this relation. This is important because the intermediate childhood stage is one in which gender plays an important role in children’s socializing, and one in which children adhere very closely to what is expected of their role. On the one hand, Spinath & Steinmayr (2008) used this analysis model for other adjustment variables, such as academic performance. On the other hand, Ladd (1999) related sex with social rejection without considering the intervention of other variables, but didn’t provide conclusive findings for this relation. Therefore, it is necessary to look closely at the effects that this differentiation of roles can have on boys’ and girls’ social adjustment. This conceptual approach will allow us to go in depth into the effects of gender on peer rejection, and not consider it solely as a moderator, with no predictive power regarding an individual’s adjustment.

Given that individual differences have been postulated as one of the most important predictors of social rejection, it may seem logical to suppose that gender differences can be, at least in part, explained by the temperamental characteristics of each individual. In the theoretical framework put for-
ward by Rothbart (1981), temperament is understood as individual differences in reactivity and self-regulation, which are of a constitutional origin and are influenced by the individual’s heredity, maturing and experience. Self-regulatory capacity of children, in particular the effortful control, has been tightly linked to individuals’ social adjustment through different indicators.

Effortful Control (EC) is a multidimensional construct including several capacities such as the voluntary focusing of attention and suppressing inappropriate responses (Rothbart & Bates, 2006). Specifically, low levels of EC linked: a) to worse social adjustment of the individual (Eisenberg, Fabes, Guthrie, & Reiser, 2000), b) with lower levels of social competence (Spinrad et al., 2007), and c) a greater presence of internalizing and externalizing problems (Murray & Kochanska, 2002). Elsewhere, lower levels of EC found in boys than in girls (Else-quest, Hyde, Goldsmith, & van Hulle, 2006), confirming gender difference in this construct. How EC might mediate or moderate relations between sex and social rejection therefore requires an in-depth study.

Furthermore, the differences that boys and girls exhibit in terms of peer social rejection may be due to educational practices children elicit from their parents. The most studied dimensions in this area have been the warmth, support and control scales traditionally associated with the democratic style. Parenting high in support and control has been associated with better child adjustment in many areas (Caspi et al., 2000). Then, in this study parenting practices (PP) could mediate or moderate the relation between sex and social reaction, i.e., sex may have an effect on parenting and generate different educational traits for boys and girls that could lie behind the different trajectories in social adjustment between the two sexes. Though some reports stated differences in the way that boys and girls are brought up, and moderated relations between parenting practices and social adjustment (Denham et al, 2000) we didn’t find studies that incorporate both aspects. Therefore, the effect of parenting on gender differences that could lead to social rejection is an issue to be addressed.

So the aims in this study were: a) to analyze the gender differences existing in peer rejection values in children aged 6 to 8 years of the First Cycle of Primary School (FCPS), b) to look the possible mediating/moderating effects of self-regulatory capacities and parenting practices in this relation, and c) considering self-regulatory and parenting practices as latent dimensions, to test different structural equation models to understand better the relation between these variables and the role of the intermediate variables in this relation.

Method

Participants

The sample comprised 474 Spanish children (50.2% boys and 49.8% girls) of 6 (33.8%), 7 (37.7%) and 8 (28.5%) year olds, corresponding to the FCPS. Participating families were recruited from various schools in Murcia (Spain). 82.7% of respondents were mothers and 75% worked during the previous 6 months. 9% had Primary School studies, 22.1% had completed Secondary School, 30.4% held a professional qualification, 26.6% were university graduates, and a 1.1% held a PhD.

Instruments

Temperament. The Temperament in Middle Childhood Questionnaire (TMQ; Simmonds & Rothbart, 2004) was used to measure temperament. This questionnaire gets information provided by parents on a number of daily situations. TMQ includes 160 items on a 5-point Likert scale grouped into 17 scales to evaluate the temperament: (1) Activation Control: The capacity to perform an action when there is a strong tendency to avoid it; (2) Activity level: Level of gross motor activity including rate and extent of locomotion; (3) Affiliation: The desire for warmth and closeness with others, independent of shyness or extraversion; (4) Anger/frustration: Amount of negative effect related to interruption of ongoing tasks or goal blocking; (5) Assertiveness/dominance: Tendency to speak without hesitation and to gain and maintain control of social situations; (6) Attentional Focusing: Tendency to maintain attentional focus upon task-related channels; (7) Discomfort: Amount of negative effect related to sensory qualities of stimulation, including intensity, rate or complexity of light, movement, sound and texture; (8) Fantasy/Openness: Active imagination, aesthetic sensitivity and intellectual curiosity; (9) Fear: Amount of negative affect including unease, worry or nervousness related to anticipated pain or distress and/or potentially threatening situations; (10) High Intensity Pleasure: Amount of pleasure or enjoyment related to situations involving high stimulus intensity, rate, complexity, novelty and incongruity; (11) Impulsivity: Speed of response initiation; (12) Inhibitory Control: The capacity to plan and to suppress inappropriate approach responses under instructions or in novel or uncertain situations; (13) Low Intensity Pleasure: Amount of pleasure or enjoyment related to situations involving low stimulus intensity, rate, complexity, novelty and incongruity; (14) Perceptual Sensitivity: Amount of detection of slight, low intensity stimuli from the external environment; (15) Sadness: Amount of negative affect and lowered mood and energy related to exposure to suffering, disappointment and object loss; (16) Shyness: Slow of inhibitory approach in situations involving novelty or uncertainty; and (17) Soothability/Falling Reactivity: Rate of recovery from peak distress, excitement or general arousal. Coefficient alpha for the subscales ranged from .621 to .887.

In line with studies that have used EC with scales designed by the Rothbart team (Chang, et al., 2011; Zhou, Main, & Wang, 2010), we selected the Attentional focusing (alpha = .887) and Inhibitory control (alpha = .670) scales to make operative this construct. In several studies, both dimensions have been identified systematically by the EC construct, over others.
Rejection scoring. To obtain subjects’ rejection, teachers administered a sociogram in which children answered, in order of preference, about 3 other children with whom they least liked; (1) working; (2) spending their free time (in the classroom context). Participation rate was of 91% and mixed sex nominations were recovered. Data were collected with the BULL-S Questionnaire (Cerezo, 2000). For each of the children participating, a rejection score was calculated following procedure detailed in the reference manual (Cerezo, 2000, p. 28-31).

Parenting. To evaluate parents’ educational patterns, the Parent-Child Relationship Inventory (PCRI; Gerard, 1994) in its Spanish adaptation (Roa & Del Barrio, 2001) was used. This questionnaire have 7 scales to collect information: (1) Parental support, which measures the amount of social, emotional and economic support parents feel they are receiving; (2) Satisfaction with parenting, which measures the amount of satisfaction parents feel in their role as parents; (3) Involvement, which measures the degree of interaction, knowledge and acceptance parents believe they have with respect to their children; (4) Communication, which evaluates the parents’ perception of how effective is the communication with their children; (5) Limit setting, which measures the importance parents give to setting limits, its management, and the perception of children as being problematic; (6) Autonomy, which evaluates parents’ attitudes in fostering or facilitating independence in their children; and (7) Role Orientation, which measures parents’ beliefs regarding the role of gender in their children’s upbringing. One last scale, Social desirability, is used to check the validity of parents’ responses. Coefficients alpha for these subscales were between .566 and .764.

According with our objectives, Parental support (Cronbach alpha = .625) and Limit setting (Cronbach alpha = .764) scales were selected to make operative the Parenting Practices (PP) construct, given its wide use in parenting evaluation (Chang et al., 2011; Maccoby & Martin, 1983). Furthermore, both scales were similar to those described by Maccoby & Martin (1983), “responsiveness” and “demandingness”, and therefore they are the most useful in providing information about parenting.

Procedure

Schools were visited and a meeting was held with the head teachers to explain them the purpose of the project. After consent were given by the school, a second meeting with the tutors of the first three years of primary education was held to instruct them in the administration of the sociogram. At the same time they were given the questionnaires on temperament and upbringing along with a letter addressed to the parents instructions to fill in both questionnaires. A telephone number for queries was also provided.

Statistical Analysis

We used a statistical modelling framework with a non experimental design (Ato, López & Benavente, 2013) in order to find the most appropriate model to fit the relation between gender and social rejection considering latent dimensions of temperament and parenting as intermediate variables. The range of possible models to consider includes mediation models (to analyze direct and indirect effects of intermediate variables), moderation models (to analyze the conditional effects of intermediate variables) and mixed models (particularly, moderated mediation models).

Some mediation models were fitted with the classical/SEM (Baron & Kenny, 1986) and some others with causal inference (Imai, Keele & Tingley, 2010) approaches. Causal inference mediation models were fitted with mediation R package version 2.4.4 (Tingley, Yamamoto, Hori, & Keele, 2013) using nonparametric bootstrap confidence intervals with 5000 bootstrap simulations. Classical/SEM models were fitted with lavaan R package, version 0.5.10 (Rosseel, 2012) and Mplus version 5.1 (Muthén & Muthén, 2006) using maximum likelihood estimation. Model fit was assessed using three different fit indices with cut-off scores (CFI>.95, SRMR<.08 and RMSEA<.05) as proposed by Hu & Bentler (1999) and Kline (2011). Moderated regression models were fitted using the pequod R package version 0.0.3 (Mirisola & Seta, 2013) with residual centering of variables to avoid multicollinearity and ensure full orthogonality between product terms and first-order effects (Lance, 1988; Little, Bovaird, & Widaman, 2006). In the same line, we also used moderated mediation models in a conditional process analysis following the statistical and conceptual diagrams for models 7 and 14 as proposed in Hayes (2013, p. 447-450).

Results

Firstly, we ran a descriptive analysis of all variables included in our sample by gender and age (see Table 1). ANOVAs were applied to check for statistically significant differences in the measures used for the groups. Significant differences between boys and girls were found for Attention Focusing ($F(1, 471) = 16.669; p < .001$), Inhibitory Control ($F(1, 471) = 15.447; p < .001$), and Social Rejection ($F(1, 471) = 13.353; p < .001$). With respect to age, significant differences were found only for Inhibitory Control ($F(2, 470) = 3.891; p = .021$).
Table 1. Basic descriptive statistics.

<table>
<thead>
<tr>
<th></th>
<th>Gender Mean(1SD)</th>
<th>6 Mean(1SD)</th>
<th>7 Mean(1SD)</th>
<th>8 Mean(1SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Girls</td>
<td>Boys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effortful control</td>
<td>EC1/Attentional focusing</td>
<td>3.38(.94)</td>
<td>3.03(.92)</td>
<td>3.17(.91)</td>
</tr>
<tr>
<td></td>
<td>EC2/Inhibitory control</td>
<td>3.33(.58)</td>
<td>3.12(.57)</td>
<td>3.14(.55)</td>
</tr>
<tr>
<td>Parenting practices</td>
<td>PP1/Parental support</td>
<td>2.39(.32)</td>
<td>2.38(.33)</td>
<td>2.38(.36)</td>
</tr>
<tr>
<td></td>
<td>PP2/Limit setting</td>
<td>2.81(.44)</td>
<td>2.76(.38)</td>
<td>2.79(.46)</td>
</tr>
<tr>
<td></td>
<td>SR/Social Rejection</td>
<td>3.96(5.74)</td>
<td>6.36(8.33)</td>
<td>5.22(7.74)</td>
</tr>
</tbody>
</table>

Standard correlation analysis was also used to explore relations between variables (Table 2). We were also interested in ascertaining if there were differences in negative votes between boys and girls depending on the informer's sex. An ANOVA confirmed the absence of a gender effect in both male: F(1, 471) = .048; p = .827, and female nominations: F(1, 471) = .029; p = .864.

Table 2. Pearson bivariate correlations (n = 427)

<table>
<thead>
<tr>
<th></th>
<th>PP1</th>
<th>PP2</th>
<th>EC1</th>
<th>EC2</th>
<th>SR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PP1</td>
<td>- .007</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PP2</td>
<td></td>
<td>- .009</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC1</td>
<td></td>
<td></td>
<td></td>
<td>- .101*</td>
<td>.023</td>
</tr>
<tr>
<td>EC2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

PP1: Parental support; PP2: Limit setting; EC1: Attentional focusing; EC2: Inhibitory control; SR: Social Rejection. * p < .05; ** p < .01

An initial simple regression model showed a significant effect of Gender on Social Rejection (SR) (B = -2.40, F(1, 472) = 7.16; p < .001). Given this result, we planned a step by step statistical modeling analysis in order to find appropriate models capable to explain the role of latent variables EC and PP, each one with two main dimensions (Attentional Focusing and Inhibitory Control for EC, and Limit Setting and Parental Support for PP) intermediating in the relation between gender and SR. Six steps of modeling were run, as described in the following paragraphs.

Parenting practices as mediators on the relationship between gender and SR

A first step was to determine whether scales of parenting

<table>
<thead>
<tr>
<th></th>
<th>Adj R²</th>
<th>Δ</th>
<th>Nonstand.</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.025</td>
<td>.002</td>
<td>- 2.404</td>
<td>471</td>
</tr>
<tr>
<td>+ parental support</td>
<td>.027</td>
<td>.002</td>
<td>- 1.081</td>
<td>424</td>
</tr>
<tr>
<td>+ limit setting</td>
<td>.056</td>
<td>.041</td>
<td>- 3.180</td>
<td>425</td>
</tr>
<tr>
<td>+ gender * parental support</td>
<td>.032</td>
<td>.005</td>
<td>.195</td>
<td>422</td>
</tr>
<tr>
<td>+ gender * limit setting</td>
<td>.057</td>
<td>.001</td>
<td>1.781</td>
<td>424</td>
</tr>
</tbody>
</table>

Table 3. Parenting practices (PP) as moderators of gender-social rejection relationship.

Parenting practices as mediators on the relationship between gender and SR

A first step was to determine whether scales of parenting

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>95% IC</th>
<th>Estimate</th>
<th>95% IC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>- 2.296</td>
<td>(- 3.71/- .99)</td>
<td>- 2.300</td>
<td>(- 3.77/- 0.95)</td>
</tr>
<tr>
<td>Direct</td>
<td>2.268</td>
<td>(- 3.71/- .96)</td>
<td>2.157</td>
<td>(- 3.57/- 0.85)</td>
</tr>
<tr>
<td>Indirect</td>
<td>- .028 (p =.50)</td>
<td>(-.16/.09)</td>
<td>- .143 (p =.27)</td>
<td>(-.47/.10)</td>
</tr>
<tr>
<td>Proportion via mediation</td>
<td>.012 (p =.49)</td>
<td>(-.05/.24)</td>
<td>.062 (p =.33)</td>
<td>(-.05/.22)</td>
</tr>
</tbody>
</table>
Effortful control (EC) dimensions as moderators of the relationship between gender and SR

The next step was to determine if dimensions of EC were moderating the effect of gender differences on SR. A moderated multiple regression model was again estimated for each dimension of EC. Attentional focusing dimension revealed a marginal moderating effect (p = .043) but inhibitory control dimension did not reach a significant effect (see Table 5).

### Table 5. Effortful Control (EC) dimensions as moderators of gender-social rejection relationship

<table>
<thead>
<tr>
<th>Effect</th>
<th>Adj R²</th>
<th>Δ Adj R²</th>
<th>Nonstandard. beta</th>
<th>Residual df</th>
<th>t</th>
<th>p &gt;</th>
<th>t</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.025</td>
<td></td>
<td></td>
<td>471</td>
<td>-3.654</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ inhibitory control</td>
<td>.064</td>
<td>.039</td>
<td>-2.541</td>
<td>470</td>
<td>-4.546</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ attentional focusing</td>
<td>.134</td>
<td>.115</td>
<td>-2.580</td>
<td>470</td>
<td>-7.756</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ gender * inhibitory control</td>
<td>.069</td>
<td>.044</td>
<td>-0.078</td>
<td>424</td>
<td>12.612</td>
<td>.078</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ gender * attentional focusing</td>
<td>.140</td>
<td>.006</td>
<td>1.343</td>
<td>470</td>
<td>2.025</td>
<td>.043</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Given a significant moderating effect of one dimension of EC, we fit two SEM models to test the effect of moderation considering EC as a latent variable. A first model included main effects of gender and EC latent indicators, and the fit was significant (χ² = 23.35, p < .001); sample-sized adjusted BIC = 7130.7. The second model included also product indicators but the fit was not better (χ² = 22.26, p < .001); sample-sized adjusted BIC = 7132.6, and product terms effect did not reach statistical significance ( = 1.058; p = .294).

### Effortful control as a mediator on the relationship between gender and SR

Our interest in this step was to know if scales of EC were mediating the relationship between gender and SR using EC indicators (attention focusing and inhibitory control) as mediators. In this case, we found a significant indirect effect with both indicators of EC, and the proportion via mediation was .376 (for Attentional focusing) and .221 (for Inhibitory control).

### Table 6. Effortful control (EC) dimensions as mediators of gender-social rejection relationship

<table>
<thead>
<tr>
<th>Effects</th>
<th>Attentional focusing (a = 474)</th>
<th>Inhibitory control (a = 474)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>95% IC</td>
</tr>
<tr>
<td>Total</td>
<td>-2.402</td>
<td>(-3.70/-1.15)</td>
</tr>
<tr>
<td>Direct</td>
<td>-1.499</td>
<td>(-2.65/-0.40)</td>
</tr>
<tr>
<td>Indirect</td>
<td>-0.903</td>
<td>(-1.49/-0.45)</td>
</tr>
<tr>
<td>Proportion via mediation</td>
<td>.376 (.p &lt; .001)</td>
<td>(.20/.71)</td>
</tr>
</tbody>
</table>

A SEM approach to fit a mediation model considering EC as a latent mediator variable revealed an acceptable fit (χ² = 1.827; p = .176, CFI = .996, RMSEA = .042, 90% CI: 0.000-0.138) and ΔRMSEA = .014, but the value of the upper bound of 90% CI was large, suggesting that the poor-fit hypothesis could not be rejected. Some plausible equivalent models (see Little, Card, Bovaird, Preacher, & Crandall, 2007) including age and some dimensions of PP were also discarded as inconsistent in the evaluation of validity of mediation model tested.

### 5) Parenting as moderating the relationship between gender and social rejection mediated by effortful control

The following step was to consider if parenting moderat-
Parenting as a direct effect on the temperamental mediator variable

The final modeling step located the effect of parenting as a direct effect on temperament using a SEM approach. We found a very satisfactory fit ($\chi^2 = 8.272, p = .309$, $CFI = .996$, $SRMR = .023$, and $RMSEA = .021$ ($90\% CI = 0.000 - .065$)). The mediation effect was complete (Baron & Kenny, 1986) because of the total effect of gender on social rejection excluding mediator (path $c$) was significant ($Z = -2.150, p < .001$), but after including mediator, the effect direct (path $c'$) changed to not significant ($Z = -.460, p = .511$). The indirect effect (product $a*b$) was also significant ($Z = -1.690; p < .001$), and the proportion of mediating effect was in this case .079. Figure 1 shows the standardized path coefficients of this model. To ensure the truthfulness of results, some equivalent models were tested. Firstly, we try to check some of the standard assumptions of general linear model and SEM: multivariate normality, completely random missing data, large sample size, correct model specification and exogeneity (Kaplan, 2009), but anyone appeared as problematic. Reverse causal effects interchanging mediator and outcome variable were discarded because the pattern of results changed dramatically. An interaction term between predictor and moderator to the final model was included, as suggested by Kraemer, Wilson, Fairburn, & Agras (2002), but the model rise to $\chi^2_{15} = 1995.534, p < .001$. Finally, the same models were also fitted with Mplus program with exactly the same results.

Discussion

Our study had a number of aims. It sought to ascertain whether there were gender differences with respect to sociometric status, in particular “rejection”. We recorded the frequency with which children chose or rejected others in school related activities. We also sought to uncover more about the role of biological variables, such as temperament, and environmental variables, like parenting practices, in the established relation between gender and peer rejection.

As regards the first aim, results showed that boys were more likely to receive negative peer nominations than girls. Several studies have found more likelihood of antisocial behavior in boys (Eivers, Brendgen, Vitaro & Borge, 2012; van Lier, Vitaro, Wanner, Vuick & Crijnen, 2005). One of the remarkable aspects in the explanation of this finding seems to be the greater presence of physical aggressiveness shown by boys, which increases the likelihood of rejection by their peers (Archer, 2004; Bettencourt & Miller, 1996; Eagly & Steffen, 1986). Relational aggressiveness, in contrast, has been reported as being more likely in girls (Björkqvist & Peltonen, 1988; Ostrov & Crick, 2007) because of the total effect of gender on social rejection excluding mediator (path $c$) was significant ($Z = -2.150, p < .001$), but after including mediator, the effect direct (path $c'$) changed to not significant ($Z = -.460, p = .511$). The indirect effect (product $a*b$) was also significant ($Z = -1.690; p < .001$), and the proportion of mediating effect was in this case .079. Figure 1 shows the standardized path coefficients of this model. To ensure the truthfulness of results, some equivalent models were tested. Firstly, we try to check some of the standard assumptions of general linear model and SEM: multivariate normality, completely random missing data, large sample size, correct model specification and exogeneity (Kaplan, 2009), but anyone appeared as problematic. Reverse causal effects interchanging mediator and outcome variable were discarded because the pattern of results changed dramatically. An interaction term between predictor and moderator to the final model was included, as suggested by Kraemer, Wilson, Fairburn, & Agras (2002), but the model rise to $\chi^2_{15} = 1995.534, p < .001$. Finally, the same models were also fitted with Mplus program with exactly the same results.

Discussion

Our study had a number of aims. It sought to ascertain whether there were gender differences with respect to sociometric status, in particular “rejection”. We recorded the frequency with which children chose or rejected others in school related activities. We also sought to uncover more about the role of biological variables, such as temperament, and environmental variables, like parenting practices, in the established relation between gender and peer rejection.

As regards the first aim, results showed that boys were more likely to receive negative peer nominations than girls. Several studies have found more likelihood of antisocial behavior in boys (Eivers, Brendgen, Vitaro & Borge, 2012; van Lier, Vitaro, Wanner, Vuick & Crijnen, 2005). One of the remarkable aspects in the explanation of this finding seems to be the greater presence of physical aggressiveness shown by boys, which increases the likelihood of rejection by their peers (Archer, 2004; Bettencourt & Miller, 1996; Eagly & Steffen, 1986). Relational aggressiveness, in contrast, has been reported as being more likely in girls (Björkqvist & Peltonen, 1988; Ostrov & Crick, 2007), although Salmivalli & Kaukiainen (2004) have also observed high levels of this aggressiveness in boys. In any case, there is a greater amount of data for physical aggressiveness in childhood, while relational aggressiveness is more frequent in adolescence (Prinstein, Boergers & Vernberg, 2001),

Table 7. Parenting dimensions as moderators of path a of mediation model (criterion variable: attention focusing).

<table>
<thead>
<tr>
<th>Effect</th>
<th>Adj R²</th>
<th>Δ Adj R²</th>
<th>Nonstand. Beta</th>
<th>Residual Beta</th>
<th>df</th>
<th>t</th>
<th>p &gt;</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.032</td>
<td></td>
<td>.350</td>
<td>472</td>
<td>4.083</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ parental support</td>
<td>.086</td>
<td>.054</td>
<td>.397</td>
<td>424</td>
<td>4.564</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ limit setting</td>
<td>.117</td>
<td>.085</td>
<td>.624</td>
<td>425</td>
<td>6.027</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ gender* parental support</td>
<td>.086</td>
<td>.000</td>
<td>.109</td>
<td>423</td>
<td>.628</td>
<td>.530</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ gender* limit setting</td>
<td>.117</td>
<td>.000</td>
<td>.074</td>
<td>424</td>
<td>.352</td>
<td>.725</td>
<td></td>
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</tr>
</tbody>
</table>

Table 8. Parenting dimensions as moderators of path a of mediation model (criterion variable: inhibitory control).

<table>
<thead>
<tr>
<th>Effect</th>
<th>Adj R²</th>
<th>Δ Adj R²</th>
<th>Nonstand. Beta</th>
<th>Residual Beta</th>
<th>df</th>
<th>t</th>
<th>p &gt;</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.029</td>
<td></td>
<td>.209</td>
<td>472</td>
<td>3.390</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ parental support</td>
<td>.057</td>
<td>.028</td>
<td>.206</td>
<td>424</td>
<td>3.757</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ limit setting</td>
<td>.106</td>
<td>.077</td>
<td>.397</td>
<td>425</td>
<td>6.142</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ gender* parental support</td>
<td>.057</td>
<td>.000</td>
<td>-.070</td>
<td>423</td>
<td>-.641</td>
<td>.522</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ gender* limit setting</td>
<td>.107</td>
<td>.001</td>
<td>-.165</td>
<td>424</td>
<td>-.1268</td>
<td>.205</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Final SEM mediation model. Figures near path represent standardized estimates. ** $p < .01$, *** $p < .001$
which may explain why boys are more likely to be rejected in this stage. Other indicators of social competence, such as empathy and prosocial behavior are lower in boys than in girls (Rose & Rudolph, 2006), which again could explain the lower peer scorings they receive.

Gender segregation suffered by children at these ages may be a further consideration of importance in explaining these differences, since children function in strict adherence to the role of their gender, basing their identity to a large extent on conducts proper to the same. In this sense, childhood environment is propitious to the development of antisocial behaviors on account of its high content of physical, brusque games (Martin & Fabes, 2001). The fact that children prefer to play with peers of the same sex may favor imitating aggressive behaviors more proper of males. This preference for same sex peers has been inversely related with the preferred “rejected” gender in the peer nominations, i.e. boys are more likely to reject girls and vice versa (Dijkstra, Lindenberg, & Veenstra, 2007). However, this not was corroborated in this study, with boys being rejected more, regardless of the sex of the child making the nomination. Gender segregation may expose boys to situations which are more propitious for fostering aggressiveness, but this would not affect the valuation of these behaviors because they are penalized by boys and girls alike.

It is important to note that the rejection observed in our study is linked to the classroom, and may not be applicable to other contexts. However, Martin & Muñoz de Bustillo (2009) included differential effects in preference nominations measured in different contexts, and they showed rejection had a trans-contextual connotation, implying that “rejected” children are poorly considered regardless of the nominations context.

Moreover, we look at how EC and PP mediate the relation found between gender and the “rejection” status. After testing some structural equations models, we found EC as the mediating variable between sex and social rejection. We have not found any previous studies that reported this structure in relation to sociometric status. Although Eisenberg et al. (2005) showed relations between parenting and temperamental characteristics and, more specifically, by the significantly lower scores boys obtained in EC construct. The effect of EC on social competence has been widely discussed (Kochanska, Murray, & Harlan, 2000; Eisenberg, Hofer, & Vaughn, 2007; Spinrad et al., 2006). Indeed, several indicators have been used to show that lower levels of EC were associated with worse social competence. Furthermore, EC is not only directly related to levels of social competence, it can also moderate the effects of other temperamental characteristics may exercise on the same, such as negative emotional. A series of studies by the Eisenberg team have highlighted this “cushioning effect” of EC with respect to negative temperamental characteristics (Fabes et al., 1999). Specifically, it has been showed that high levels of anger and discomfort were not forerunners of low social competence when EC was high. Hence, EC was a risk or prevention factor in the emergence and development of social skills and was involved in the consequent effects of an individual’s subsequent socio-emotional adjustment. According with Else-Quest et al. (2006), this study confirms the significant differences observed in EC when boys and girls were compared, with the latter scoring higher. Then, it is possible these differences determine the differential effect that anger or aggressiveness levels may have on the sociometric status, and in detriment of boys.

From the environmental perspective, the family atmosphere of the children is important in their socialization, and a wealth of studies have used scales of support and control in an attempt to gauge the effect of parenting practices, on children’s social competence (Weiss, Dodge, Bates, & Pettit, 1992). Harter (1999) found a moderate relation between parental support and the development of social skills, and other studies found significant relations between parental support and positive adjustment (Caspi et al., 2004; Denham et al., 2000); Dodge & Pettit (2003) reported associations between negative parenting practices and social and behavioral problems. In this study, PP has not been shown to be a mediator or moderator in the relation between sex and social rejection, between sex and EC, or between EC and social rejection. Nevertheless, the effect of PP was significant as an explanatory variable of the EC. As we mentioned earlier, to the best of our knowledge there are no other studies that replicate this relation between temperament and parenting with respect to gender differences in social rejection measured according to sociometric status.

Therefore the parents’ style of upbringing didn’t explain why boys are rejected more than girls, so our conclusion is PP, that includes little support and discipline, can, at first sight, be associated with a greater likelihood of social rejection (although results in this respect have not been significant); there is no difference in PP according to sex, unlike what has been reported in other studies (McKee et al., 2008; Zhou, Eisenberg, Wang, & Reiser, 2004). This may be due to the ever stronger messages parents receive to bringing up children with the focus on equality rather than difference of sexes. Besides, child rearing practices do not mediate or moderate the relation found between gender and EC. In other words, the fact that boys have lower self-regulatory capacities than girls is not mediated by parenting practices. Although Crockenberg (1986) reported a differential effect in upbringing for boys and girls on the basis of temperament, we have not found any that put parenting as a mediator in the relations between gender and temperament using a specific analysis of mediation or moderation.

PP neither has direct effects on social rejection. Although some studies point to a relation between certain types of parental discipline and social adjustment of the individual
(Engels, Dekovic, & Meeus, 2002; Chen, Dong, & Zhou, 1997), no one has examined in depth the specific relation between parenting and social rejection as measured by sociometric status. Furthermore, PP didn’t show mediation or moderation effects in the relation found between EC and the sociometric status “rejection”. Then, low levels of EC associated with a higher likelihood of peer rejection were not mediated by PP. The approach to these relations in the literature has focused on the effects of mediation of temperament in the relation between parenting and social adjustment and not the other way round (Eisenberg et al., 2001; Valiente et al., 2006).

In this regard, this study showed that PP were not directly related to social rejection, although they significantly explained EC. Specifically, positive PP, with high levels of support and discipline, traditionally linked to the democratic style, point to high levels of EC (Eisenberg, Zhou, Spinrad, Valiente, Fabes & Liew, 2005). Hence, a causal relation has been observed between parenting and temperament, such that positive parenting practices seem to foster greater and better self-regulatory capacities in children (Lengua, 2007). Similarly, low levels of support and discipline lead to lower levels of self-regulation (Kochanska & Knaack, 2003). The data were collected, moreover, during childhood, when the relations between parenting and temperament were deeply rooted, given the ample experience the child and carer now have. These results therefore indicate that the style of upbringing did not have a direct mediating or moderating effect on social rejection. Rather, it is gender, mediated by children characteristics, that determines social adjustment. Gender therefore explained a higher or lower score in EC, which in turn explained peer social rejection. However, the PP employed can raise or diminish the levels of EC, which seems logical given the important role of parents and careers in the education of emotional self-control.

In conclusion, we think that two important issues arise from the findings of our study. On the one hand, there is a greater likelihood of boys being socially rejected more than girls by their peers during childhood, due to a large extent to their lower self-regulatory capacities. On the other hand, importance must be given to the fact that the educational environment only affects social rejection indirectly, through the effect it has on children’s temperament, and EC is a key factor in explaining the differences between boys and girls in terms of social rejection. We believe that educational practices in both the home and at institutional level, should take into account the importance of detecting low levels of EC and of fostering its development, with special attention to boys, given the high implications it has in their later socio-emotional adjustment.

This study has limitations. Perhaps the most important of these has to do with the measure of the social rejection we have worked with, as this didn’t consider the behaviors that characterize peer social rejection when making nominations. Other indicators of temperament and parenting, beyond the maternal report would also have enhanced the interpretation of our data. It would, moreover, be of interest in future research to look more closely other temperamental characteristics that might affect social rejection, e.g. negative emotionality. A further point is that we have analyzed the indirect parental effect (measured through parenting practices) on rejection, so it would be interesting to get a measure of the direct effect of parents in modeling the socializing behaviors of their children in the peer group. Finally, a longitudinal approach to the relations found is required to ascertain whether the gender differences remain in later stages.

References


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