

Why do early adolescents bully? Exploring the influence of prestige norms on social and psychological motives to bully

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## Why do early adolescents bully? Exploring the influence of prestige norms on social and psychological motives to bully

Recent perspectives on bullying have stressed the link between the motivational components of social behavior and bullying. At the psychological level, bullying has been linked to status goals (e.g., Sijtsema, Veenstra, Lindenberg, & Salmivalli, 2009), and to distortions in social motivation (Camodeca & Goossens, 2005). Bullies pursue more antisocial goals than non-bullies (Camodeca & Goossens, 2005) and use bullying as means for achieving dominant positions (Houghton, Nathan & Taylor, 2012; Sijtsema et al., 1999). These findings, along with studies providing some evidence that bullies are not socially incompetent but have good social skills (Sutton, Smith & Swettenham, 1999), support the view of bullies as dominance oriented and prone to use their skills in order to effectively manipulate their peers to obtain their own goals (Garandeanu & Cillessen, 2006; Sutton et al., 1999). This perspective is in line with the initial definition by Olweus (1978) that considers bullying as an intentional behavior acted by youth with higher (physical, psychological or social) power than their victims.

Bullying has been associated with the Machiavellian personality disposition (Christie & Geis, 1970; Sutton & Keogh, 2001), considered a non-pathological personality trait (Paulhus & Williams, 2002) characterized by the belief that people are manipulative and manipulable (Andreou, 2004; Wilson, Sloan & Miller, 1996). Consequently, social manipulation can be used by Machiavellian individuals to pursue their social goals. Since bullying has been linked to the pursuit of dominance goals particularly in adolescence (Caravita & Cillessen, 2012), and bullies perceive this behavior as an effective tool in

handling relationships with peers (Garandeau & Cillessen, 2006), adolescents with higher Machiavellianism may be more at risk of displaying bullying behavior.

Bullying is also a group phenomenon (Salmivalli, Lagerspetz, Björkqvist, Österman & Kaukiainen, 1996). From a social perspective, studies show that bullies can be popular within their peer groups (Caravita, Di Blasio, & Salmivalli, 2009; Rodkin & Berger, 2008; Vaillancourt, Hymel, & McDougall, 2003), and that bullying can be used to achieve social status (Houghton et al., 2012). Accordingly, there is some evidence that in adolescence being perceived as popular by peers can work as an additional, social motive to bully others (Caravita & Cillessen, 2012). Nevertheless, no studies have investigated the relative influence of individual (such as being Machiavellian) and social (such as being popular) motives in explaining bullying.

Bullying and more broadly aggression have also been shown to depend on the peer context, particular on peer group norms (Berger & Rodkin, 2012; Ellis & Zarbatany, 2007; Espelage, Holt & Henkel, 2003). This line of research posits that descriptive (behavior displayed by the members of the group), injunctive (attitudes and beliefs shared at the group level) and prestige norms (behavior showed by high status individuals within the group) set the stage for bullying to occur, by creating a social context that normalizes, accepts, or even values these behaviors (Chang, 2004; Dijkstra & Gest, 2014). Besides directly promoting bullying, norms can also moderate the likelihood of certain individual attributes to predict bullying (Menesini, Palladino, & Nocentini, 2015; Sentse, Veenstra, Kiuru, & Salmivalli, 2015).

The present study expands these findings by assessing simultaneously intrapsychological and social motives for bullying. Moreover, adopting an ecological

framework, this study tests if these motives for bullying are affected by classroom prestige norms.

### **Machiavellianism, popularity and bullying**

There is consistent evidence showing that popularity is associated with bullying and aggression (e.g., Berger & Rodkin, 2012; Vaillancourt, Hymel & McDougall, 2003).

Recent studies suggest that the pursuit of dominant and high status positions within the peer group is the main motivation for bullying behavior (Olthof, Goossens, Vermande, Aleva & van der Meulen, 2011; Salmivalli & Peets, 2009). Accordingly, among adolescents bullying behavior has been found to be associated with the endorsement of agentic goals (i.e., oriented to power, mastery and status; Caravita & Cillessen, 2012; Sijtsema et al., 2009). Likewise, in a study with early adolescents who were suspended because of bullying episodes, participants reported how they deliberately used bullying to gain respect and recognition (Houghton et al., 2012).

Machiavellianism is a personality trait, consisting in the degree a person feels that other people are untrustworthy and manipulable in interpersonal situations, and is willing to manipulate others (Andreou, 2004; Christie & Geis, 1970). Among adults, Machiavellianism has been found to be associated with a preference to obtain reward and to make reward-oriented decisions (Birkás, Csathó, Gács, & Bereczkei, 2015). More broadly, individuals with higher levels of Machiavellianism show behavioral tendencies toward self-promotion, emotional coldness, and aggressiveness. Scholars investigating Machiavellianism in (early) adolescence (using the Kiddie-Mach scale; Christie & Geis, 1970) showed that the construct of Machiavellianism includes different components, even if with some differences regarding its structure in different cultural contexts. In an English sample of 198 early adolescents, aged 9 to 12 years, Sutton and Keogh (2001) found that

Machiavellianism included three dimensions: beliefs of lack of faith in human nature, dishonesty (beliefs that lying and being non-honest are acceptable behaviors), and distrust (beliefs that you cannot trust in other human beings). In a Greek sample of 186 early adolescents aged 9 to 12 years, besides the three dimensions identified by Sutton and Keogh, Andreou (2004) found a fourth dimension, manipulation, described as beliefs that manipulating others in order to reach desired goals is acceptable.

Considering the relevance of peers during adolescence, Machiavellian adolescents may perceive their relationships with peers as functional in order to achieve their goals, and thus they may use different social behaviors (antisocial and prosocial) to manipulate their relationships (Berezkei, Birkás, & Kerekes, 2010; Hawley, 2003). Accordingly, even though bullying is often socially rejected, it has been also found to be efficient to achieve social goals depending on the context in which it occurs (Sutton et al., 1999). In light of these findings, it seems reasonable to suggest that Machiavellianism could constitute a risk factor for adolescents to bully others.

In this vein, few studies investigated the association between Machiavellianism and bullying. In their seminal work Sutton and Keogh (2000) found that early adolescents who were categorized as bullies scored higher on Machiavellianism than their peers. These findings have been mirrored also in a study on 187 adolescents (9-14 years old), in which bullying was positively associated with the Machiavellian tendency (Giampietro & Caravita, 2006). Likewise, Andreou (2004) showed that bullying was positively related to Machiavellianism (total score) and to the lack of faith in human nature component among boys. Among girls higher levels of bullying were related to higher levels of manipulation. Andreou also found that adolescents who reported to be bully/victims showed higher

Machiavellianism, total score and on lack of faith in human nature component, compared to their peers.

Altogether, the aforementioned literature supports the view of bullying as a behavioral tool that can be used by adolescents to acquire social status, thus generating a self-reinforcing social process for bullying. Adolescents may use bullying to gain status, and popular adolescents may bully peers to keep their status (Garandeau & Cillessen, 2006). Hence, adolescents high in Machiavellianism may be particularly at risk of displaying bullying behavior.

### **Social context for bullying**

The literature has clearly demonstrated that bullying is also dependent on the context. During early adolescence, the classroom constitutes the main social context in which peer norms are established and reinforced or sanctioned. Rodkin and Ryan (2012) proposed that the school (and by extension the classroom) culture constitute a society by itself, in which by accepting or rejecting the norms that the group sets as desirable students establish a pecking order, and eventually learn how to get along with each other.

Several studies show that both descriptive and injunctive norms on aggression increase the likelihood of aggression and bullying to occur. For instance, individuals were more likely to display aggressive behaviors towards their peers in peer groups where aggression was more prevalent (Berger & Rodkin, 2012; Espelage et al., 2003). Above the prevalence of aggression, injunctive norms regarding aggression (i.e., the value attributed to it) are also relevant (Guerra, Williams, & Sadek, 2011; Henry, Guerra, Huesmann, Tolan, VanAcker, & Eron, 2000). High status adolescents are more likely to behave aggressively or to bully peers in context where the peer norm is more positive towards aggressive behaviors or bullying (Chang, 2004; Huesmann & Guerra, 1997; Salmivalli &

Voeten, 2004). Qualitative research also shows that adolescents engage in aggressive behaviors when they feel it is reinforced and accepted by their peers (Potocnjak, Berger, & Tomicic, 2011).

### **Classroom prestige norms**

Studies have adopted different approaches to assess what is valued and accepted by the peer group. Typically, studies have aggregated individual measures of behaviors and attitudes (Chang, 2004). Recent approaches have adopted the notion of “norm salience” to describe how within a particular setting a certain behavior is sanctioned. Considering that being popular is a priority over other assets during adolescence (LaFontana & Cillessen, 2010; Ojanen, Grönroos, & Salmivalli, 2005), behaviors that are associated with social status may become therefore more likely to be displayed. The norm salience approach captures the behaviors that are displayed mostly by the high status peers, who in turn are believed to be more influential within peer groups (Dijkstra, Cillessen & Borch, 2013; Dijkstra & Gest, 2014; Lease, Kennedy, & Axelrod, 2002). In particular, those peers who are nominated (and thus perceived) by peers as cool might be the most influential in terms of their social standing within the peer group (Rodkin, Farmer, Pearl & VanAcker, 2006; Rudolph, Abaied, Flynn, Sugimura & Agoston, 2011). Pountain and Robins (2000) argue that coolness refers to a set of valued attributes and behaviors that are usually contradictory to official values, and that capture high social status. Even though being cool is of great importance among adolescents and raises as a significant index of social status, defining what or who is cool depends on idiosyncratic factors (Rodkin et al., 2006). Therefore, what is cool within the classroom may constitute a privileged avenue to tap on high status within a particular adolescent group, and those characteristics and conducts that are displayed by high status members of the group may set the stage to define how to behave in order to gain

social prestige. Following Dijkstra and Gest (2014), prestige norms are based on the association of a particular behavior with markers of social status.

Earlier studies have shown that physical and relational aggression may have different associations with social status, and therefore with social prestige. Physical aggression refers to direct behaviors that imply physical harm (such as hitting, pushing and kicking), whereas relational aggression includes behaviors that damage relationships and social status (such as exclusion and spreading rumors). Cillessen and Mayeux (2004) showed that during adolescence relational aggression increasingly predicted social prominence (i.e., visibility), whereas physical aggression, although positively associated with prominence, was less predictive of it over time. Seemingly, Rose, Swenson and Waller (2004) also found a stronger association for relational over physical aggression and popularity, even after controlling for the other aggression form. Based on this literature, it is likely that different forms of aggression have different effects on individual motives to bully. Houghton and colleagues (2012) found that adolescents who bullied to gain status used more visible (physical) forms of aggression at the beginning to gain status, but more subtle (relational) forms of aggression were used to maintain that position. Therefore, it is likely that prestige norms on physical and relational aggression will have differential effects on the likelihood that adolescents may engage in these behaviors.

### **Gender-related differences**

The literature indicates that physical bullying is more frequently displayed by boys than girls (e.g., Scheithauer, Hayer, Petermann, & Jugert, 2006; Wang, Iannotti, & Luk, 2012), even if some biases in the conceptualization and measurement of bullying may influence these findings (Capranzano, Frick, Childs & Terranova, 2011; Carbone-Lopez, Esbensen & Brick, 2010).



In contrast, studies exploring gender differences in Machiavellianism in early adolescence show inconsistent results. In at least one sample (Sutton & Keogh, 2001) Machiavellianism has been shown to be more typical of boys than girls, with regards to the overall dimension of Machiavellianism and to the Machiavellian component of dishonesty. Nevertheless, this finding was not replicated in other studies. In the Italian early adolescent sample investigated by Giampietro and Caravita (2006) and in the Greek sample by Andreou (2004) Machiavellianism did not differ significantly by gender, even if boys scored slightly higher than girls. In the Greek sample, however, gender moderated the association between bullying and Machiavellianism and its dimensions (see the subheading Machiavellianism, popularity and bullying).

Focusing on perceived popularity as possible social motivator for bullying, the associations between these two dimensions have been found to be significantly stronger for boys than girls in early adolescence (Caravita & Cillessen, 2012). This result is in favor of a stronger effect of popularity as a motive to bully for boys than girls. Nevertheless, mixed findings have been presented regarding the association between bullying and perceived popularity by gender (Rodkin & Berger, 2008; De Bruyn, Cillessen, & Wissink, 2010).

Differently from bullying, there is some evidence that aggression may be displayed by girls and boys at a different rate. When controlling for overt aggression, adolescent girls display relational aggression at higher rates than boys (Smith, Rose, & Schwartz-Mette, 2010). Furthermore, in adolescence gender also seems to influence the association between aggressive behavior and peer acceptance; even though both relational and physical aggression are usually associated with lower likability among peers (e.g., Cillessen & Mayeux, 2004), when controlling for the overlap between overt and relational aggression, girls—but not boys—who are relationally aggressive are liked by peers of the opposite

gender (Smith et al., 2010). Based on these findings we can speculate that, at least under some conditions, informal norms may favor relational aggression among adolescent girls.

### **The present study**

Earlier studies have already found associations between bullying and Machiavellianism, and popularity and bullying; however, no studies have considered these relationships together acknowledging the group nature of the phenomenon. In this study we tested simultaneously intrapsychological (i.e., Machiavellianism) and social (i.e., its association with social status) motives to bully. Moreover, we tested if these prospective associations were affected by the value attributed to aggression in the classroom by means of classrooms' prestige norms.

Since earlier studies have been inconsistent regarding gender differences on Machiavellianism (Sutton & Keogh, 2001), and the association between bullying and perceived popularity by gender (Rodkin & Berger, 2008; De Bruyn et al., 2010), we tested for main effects of gender, and then explored separate models for boys and girls.

Two sets of hypotheses guided this study. First, we expected to confirm earlier studies showing positive prospective associations between Machiavellianism and bullying, and popularity and bullying. Seemingly, based on the literature that does not show clear associations between Machiavellianism and perceived popularity, we had the exploratory hypothesis that these processes work distinctly in predicting bullying. The second set of hypotheses referred to the expectancy that prestige norms would influence both the association between Machiavellianism and bullying, and popularity and bullying. More specifically, prestige norms regarding relational aggression, due to its subtle, more sophisticated nature, would be more influential on the association between Machiavellianism and bullying, whereas prestige norms on physical aggression would be

more influential on the association between popularity and bullying, due to its more visible character. We also tested if these associations varied by gender.

## Method

### Participants

The present study involved 978 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> graders (age range 10-13 years, 52,1% boys, evenly distributed by grade) from 28 classrooms (average class size 35 students) in four schools in Santiago, Chile, who were part of a larger longitudinal study on peer relations among adolescents. Socioeconomic status (SES) was assessed at the school level through the Educational Vulnerability Index (IVE) that measures the percentage of students that are considered vulnerable (based on family income, medical needs, birth weight, and residential conditions, among others); IVE across the four participating schools ranged from 42 to 72%, categorizing two schools as middle, one as middle-up, and one as middle-low SES. No information about ethnicity was gathered, since the composition of the Chilean society is mostly homogeneous, with roughly 95% of the population self-identifying as white (or mixed-race with European ascendancy) (Ministerio de Planificación de Chile, 2005).

### Procedure

The present study features data from three consecutive waves in the Fall (April) and Spring (September) 2013, and Fall (April) 2014 (analyses of earlier assessments of this data included data gathered in 2012, and are reported in Berger, Batanova & Cance, 2015, and Berger & Palacios, 2015). Not all measures were administered in all waves: Sociometric data, including data assessing popularity and prestige norms, was collected in all waves; data on bullying was collected in the first and third waves, whereas data on

Machiavellianism was collected at wave 2. Active parental consent and participant assent were collected, following the ethical standards of the host university and the funding institution.

## Measures

**Bullying.** We used the Illinois Bullying and Fighting scale (Espelage & Holt, 2001). This self-reported scale includes three subscales: bullying (9 items), fighting (5 items), and victimization (4 items) with a four point likert type answer. In the present study only the bullying subscale was used (sample items are “I have bullied others” and “I have excluded others”), from which only 7 items were considered following confirmatory factor analysis (CFA; MPlus 7.0, Muthén & Muthén, 1998/2007) and scale reliability analysis. For this measure and the Machiavellianism scale (see below), items were removed when (1) results and modification indices from Exploratory Factor Analyses (EFAs; for the Machiavellianism scale) and CFAs indicated cross-loadings or factor-loadings of the items that were not coherent with the theoretical assumptions of the measure, and/or (2) when the items were substantially weakening the scale reliability. CFA fit indices for the first and third assessment were CFI = .960, RMSEA = .040, and CFI = .947, RMSEA = .044, respectively. Removed items were “I have encouraged others to fight” and “I have started arguments or conflicts”. Cronbach’s alphas were .77 and .70, respectively.

**Perceived popularity.** A roster with all the names of their classmates was given to participants, who were asked to nominate their most and least popular peers. A proportion score was calculated as the number of nomination received over potential nominations. This process implies standardization within classroom, with scores ranging from 0 (no nominations) to 1 (nominations by all peers). For each participant the unpopular score was

subtracted from the popular score, thus obtaining the combined score for perceived popularity (range -1 to 1).

Machiavellianism. We used the Kiddie Mach scale (Andreou, 2004; Christie & Geis, 1970). Analyses on the structure of the scale offer mixed findings; some literature supports a single factor dimensionality of the scale (Allsopp, Eysenck, & Eysenck, 1991), but Sutton and Keogh (2001) identified three subscales: lack of faith in human nature, dishonesty, and distrust. Andreou (2004) identified a fourth subscale: manipulation. Based on this background, we performed item analyses and investigated the dimensionality of the scale by performing EFAs (extraction method: Principal Axis Factoring; rotation method: Oblimin), to exclude the items not contributing to the scale properly (see above). The final EFA model included 15 items (Cronbach's alpha = 0.63), and extracted four factors with eigenvalue over 1, explaining 46.11% of the variance. The exam of the scree plot confirmed this four factors solution, with all the item loadings being over .30.

Three of the four factors overlapped with the subscales found by Sutton and Keogh (distrust, dishonesty, lack of faith in human nature). The fourth factor consisted of 2 items (item 7 "Sometimes you have to hurt other people to get what you want"; item 18 "Sometimes you have to cheat a little to get what you want") and assessed the tendency to prioritize one's own goals over other's well-being and interests; we labeled it personal goals, and this factor overlapped with the manipulation dimension identified by Andreou (2004). Then, a CFA (estimator: Maximum Likelihood Robust) was performed in order to test the second order structure of the scale: items loading the four factors, which, in turn loaded a unique second-order factor for the overall Machiavellianism. After adding correlations of three pairs of items (items 7 and 5; items 12 and 5; items 2 and 14), the final

fit of the scale was acceptable (CFI = .905, RMSEA = .038). Following these results, we used both the overall score and the four factor scores in the following analyses.

Prestige norms. Using the same peer nomination procedure as for perceived popularity, participants were asked to nominate their coolest classmates, those who ignore others (relational aggression), and those who start fights (physical aggression). Classroom prestige norms were calculated as the average within classroom correlation between coolness and both relational and physical aggression (see Dijkstra & Gest, 2014), aiming at capturing the degree to which cool peers engage in aggressive behaviors.

#### Analytical strategy

The present study assessed baseline scores on bullying at wave 1, popularity, Machiavellianism and prestige norms on aggression 6 months later (wave 2), and bullying one year after wave 1 (wave 3). Considering the nested nature of the data (adolescents within classrooms) and the research question that guided the study, Hierarchical Linear Modeling (HLM) was used. Following procedures suggested by Raudenbush and Bryk (2002), first a fully unconditional model was tested to evaluate if HLM was appropriate based on the intraclass correlation. Next, a model including all level one predictors was tested (baseline score for bullying in time 1, perceived popularity and Machiavellianism assessed at time 2, and gender). Finally, a third model was tested by adding as level two predictors the prestige norms (assessed at time 2) on the intercept of bullying, and on the intercepts and slopes of Machiavellianism and popularity, thus assessing cross-level interactions (see Figure 1 and Table 1).

#### FIGURE 1 AND TABLE 1

## Results

First, correlations between study variables were calculated. Bullying was highly stable over one year ( $r = .60, p < 0.01$ ). Machiavellianism was associated with bullying six months before and after ( $r_s = .25$  and  $.20, p_s < 0.01$ ). Perceived popularity was also positively associated with bullying at both assessments ( $r_s = .21$  and  $.17, p_s < 0.01$ ). Machiavellianism was uncorrelated to popularity ( $r = .01$ ). The same pattern of correlations was observed for boys and girls (see Table 2), with the only exception that for girls only earlier bullying was associated with later popularity ( $r = .14$ ). Correlations between Machiavellianism subscales ranged from .39 to .90.

### TABLE 2

Table 3 presents the results for the HLM models. First, the fully unconditional model showed that 7% of bullying behavior was attributable to classroom differences. In model 2, all level one predictors (stability of bullying, perceived popularity and Machiavellianism at time 2, and gender) were included. There was a significant intercept effect (est. = 1.58,  $p < 0.01$ ). Bullying was highly stable over a one-year period (est. = 0.48,  $p < 0.01$ ). Machiavellianism predicted later bullying (est. = 0.89,  $p < 0.01$ ). No association between perceived popularity and later bullying was observed.

### TABLE 3

The final model included also the effects of prestige norms for physical and relational aggression on the intercepts and slopes of level one variables (i.e., cross level interactions). As shown in Table 3 for model 3, the association of Machiavellianism with later bullying was strengthened in classrooms with higher prestige norms for relational aggression (est. = 0.246,  $p < 0.01$ ).

In order to further explore the nature of these associations, similar models were tested for each Machiavellianism factor separately. In order to facilitate reading, only the coefficients for main effects and cross-level interactions of Machiavellianism factor scores are presented in Table 4, since for all models all other effects remained similar (i.e., significant bullying stability, and no effects of popularity or gender on bullying). Main effects of three of the four Machiavellianism factors on later bullying were observed, with the exception of lack of faith in human nature that was not significant. The cross-level interaction with prestige norms on relational aggression was significant for all factors, while the cross-level interaction with prestige norms on physical aggression was non-significant, thus showing the same pattern as for the overall Machiavellianism scale.

#### TABLE 4

Although a main effect of gender on bullying was not found, separate models were tested for boys and girls (see Tables 5 and 6), considering earlier studies suggesting the possible moderation role by gender (see the Introduction section). Since classrooms were mixed, prestige norms did not differ for boys and girls.

Classroom heterogeneity explained 5.2% and 9.9% of the variance on bullying for girls and boys, respectively. For both genders bullying was highly stable, although higher



for boys. The main effect of Machiavellianism on later bullying was observed for girls (est. = 0.119,  $p < 0.05$ ) but not for boys (est. = 0.050, ns). However, when including prestige norms in the model Machiavellianism did predict later bullying for both girls and boys. Moreover, only prestige norms for relational aggression—but not for physical aggression—increased the association between Machiavellianism and later bullying, and this effect was stronger for girls (est. = 0.277,  $p < 0.05$ ) as compared to boys (est. = 0.246,  $p < 0.05$ ).

## TABLES 5 AND 6

### Discussion

Several theories have been proposed to explain bullying behavior, ranging from personal skills, social goals, and contextual influences. Scholars agree that the predicting effect of any of these factors is affected by the normative context in which they unfold. We intended to bridge these considerations by adopting a longitudinal, multilevel approach.

One of the novelties of this study is that we tested simultaneously different motives to bully related to individuals' (i.e., Machiavellianism) and group's characteristics (i.e., perceived popularity among peers), disentangling the differential predicting value of these motives. Our results do support the predicting effect of Machiavellianism on later bullying behavior after controlling for baseline scores. However, they fail to confirm that perceived popularity predicts bullying. It is worth noting that bullying showed high stability over a one-year period, explaining an important portion of the variance. However, simple correlations showed that both motives were positively associated with bullying. In other words, adolescents who display bullying behavior show higher levels of Machiavellianism

and are perceived as popular by their peers, but only being Machiavellian is associated with increases in bullying behavior over time.

Research on Machiavellianism and bullying is scarce, particularly among adolescents. The basic assumption regarding Machiavellian adolescents is that in order to achieve their goals they would use any strategy disregarding potential negative effects on others, even ‘using’ their peers as means for achieving their goals. The most systematic approach to this idea has been carried by Hawley (2003; 2007). She identified a group of adolescents (‘bistrategic controllers’) who, despite their aggression, were perceived to be popular and rated themselves as socially skilled. Indeed, research has shown that aggressive individuals can be characterized as Machiavellian when they use social control strategies in a functional way to gain or maintain status (Vaillancourt, McDougall, Hymel & Sunderani, 2010). This picture fits very well with proactive aggressive persons and bullies, who use aggression as an instrumental tool. Accordingly, when distinguishing the single dimensions of Machiavellianism, only the most exquisitely motivational components (i.e. pursuing personal goals over others’ interests, appreciating dishonest behavior, and distrusting in others) predicted bullying, and the most purely cognitive component (that is lacking faith in human nature) did not. This may indicate that it is actually the motivation related to prioritizing one’s own goals and to evaluating positively negative behaviors what increases the risk of bullying, probably because this behavior is perceived as a useful tool to gain power among peers. However, being Machiavellian, i.e., being motivated to use personal social skills to manipulate others, does not necessarily imply having the skills to be successful. Therefore, not all Machiavellian adolescents using bullying to achieve their goals are necessarily successful in reaching this aim and are rewarded with status or appreciation by peers. In the present study we found no association between being

Machiavellian and peer perceived popularity. This outcome may be influenced by different dimensions: the existence of clusters of Machiavellian adolescents less or more skilled, and thus less or more successful in gaining status among peers; the presence of different group norms rewarding to a different extent the behaviors used by Machiavellian adolescents to reach their objectives; the interplay of different status dimensions. From this last perspective, although bullying may imply achieving social visibility and prominence, bullies are often rejected by peers (e.g., Hymel, Closson, Caravita, & Vaillancourt, 2011). Hence, especially in some peer-groups, the use of bullying as a way to achieve central positions may not be as functional. The complexity of this interplay of being Machiavellian with behaviors and status is suggested, for instance, by a study by Wei and Chen (2012), who reported that when bullies were high in Machiavellianism the negative association between bullying and peer acceptance faded. This outcome may depend on the fact that at least some Machiavellian adolescents may be more adaptive to qualities of their peer-group; they may use bullying to get benefits when they understand that this behavior is rewarded and well evaluated by their peers, while they may prefer to behave differently when bullying is less accepted by their peer-group. We are, therefore, suggesting that the association between Machiavellianism and behavior may be influenced by two orders of factors: individual features of Machiavellian adolescents (e.g., being less or more socially skillful), and features of the peer-group, which can differently evaluate and reward aggressive behavior with status. In this study we contributed to the still limited literature on Machiavellianism related to behavior (i.e., bullying), by exploring this second possibility. In other words, we investigated the possible interplay between Machiavellianism, bullying, and prestige norms for aggression, and provided some evidence that factors related to the peer context actually influence the association between being Machiavellian and bullying.

These findings contribute to clarify how and under which conditions motivational processes related to this particular personality trait can favor the emergence of bullying.

Accordingly, the consideration of the context in which bullying emerges is another significant contribution of this study. Several studies have shown that descriptive norms (Espelage, Holt & Henkel, 2003) and injunctive norms (Burton, Florell & Wygant, 2013; Salmivalli & Voeten, 2004; van Goethem, Scholte & Wiers, 2010) are associated with bullying. In the present study we followed the novel approach developed by Dijkstra and Gest (2014) in order to determine the classroom salience of a specific behavior as its within-classroom correlation with popularity. Being cool tackles attributes and behaviors that are central within an idiosyncratic context (Pountain & Robins, 2000). Our results show that prestige norms on relational aggression enhanced the predicting effect of Machiavellianism on later bullying. In other words, when relational aggression is considered cool, adolescents who are Machiavellian are more likely to exert bullying towards their peers. These findings support the notion of Machiavellianism as a functional perspective of peer relations, by displaying behaviors that may be perceived as more acceptable within the specific social contexts. Earlier studies with Chilean population (Berger & Palacios, 2015) also showed that in classrooms with positive attitudes towards prosocial behavior, Machiavellian adolescents might feel compelled to use prosocial over aggressive behaviors to meet their goals. From the negative side, this result also suggests that in classrooms in which aggression is allowed and rewarded by peers Machiavellian adolescents may be more likely to use bullying to reach their own goals. Prestige norms, however, did not directly impact bullying. From an ecological perspective, this finding supports the view of bullying as a result of both individual and contextual factors interacting. In other words, prestige norms by themselves do not influence bullying

behaviors, but they create an environment in which at risk adolescents, such as Machiavellian adolescents in this study, become more likely to bully others. The lack of a direct effect could also be explained considering that prestige norms referred to aggression and not to bullying. Future studies should further investigate environmental factors that may favor or difficult the emergence of specific antisocial (and by contrast, prosocial) ways of interpersonal relationships.

With regards to social status, our findings may seem surprising considering previous evidence showing perceived popularity as predicting peer aggression (Cillessen & Borch, 2006; Cillessen & Mayeux, 2004). However, to our knowledge this is the first study assessing longitudinal associations between perceived popularity and bullying, when controlling for the effects of Machiavellianism, which may be a stronger motive than being popular in explaining bullying. Also, although the literature on aggressive behavior is conclusive, associations between bullying and social status, which we explored as a possible additional motive to bully, should not be considered as equivalent (Carrera, DePalma & Lameiras, 2011; Cornell & Bandyopadhyay, 2010). For instance, Olthof and Goossens (2007) found that boys who displayed bullying behaviors looked for acceptance only from peers who also displayed bullying and antisocial behaviors, but not from non-bullying peers. In the case of girls, they looked for acceptance of boys who were bullies themselves. It may happen that adolescents also look for being popular among specific peers who also bully others to keep their status. When considering together also the results on the absence of significant main effects from prestige norms to bullying, the findings on perceived popularity as non-associated with bullying suggest that intrapersonal risk factors, such as Machiavellianism, are more relevant in explaining bullying than peer-context risk factors may be. Indeed, controlling for the reciprocal influences of these dimensions by

testing them in unique models, only being Machiavellian predicted longitudinally bullying. Contextual dimensions may play a relevant role more as moderators of the influences of intrapersonal factors on this behavior, than as direct risk factors. More further studies are needed that further explore this hypothesis using longitudinal data, and that examine in the same models the effects of other intrapersonal and context factors on this form of antisocial behavior.

With reference to gender, recent studies have questioned the assumption that bullying is more prevalent among boys, arguing that both conceptualization and measurement biases have led to this conclusion, and show that prevalence rates are becoming similar between genders (Capranzano, Frick, Childs & Terranova, 2011; Carbone-Lopez, Esbensen & Brick, 2010). Accordingly, Rodkin and Berger (2008) found that the popularity of male bullies was positive when they victimized other boys, but even negative when their victims were girls. Houghton and colleagues (2012) found that girls were particularly prone to use relational bullying to achieve social status. Regarding Machiavellianism gender differences are less clear (Andreou, 2004; Giampietro & Caravita, 2006; Sutton & Keogh, 2001). Therefore, and following the study by Andreou (2004), we decided to test also separate models for boys and girls. In our study we found that Machiavellianism predicted bullying only for girls, and that in both groups perceived popularity was not predicting bullying over time (although correlation indices suggest that bullying was associated prospectively with popularity for girls). This difference might be explained by the use of social skills attributed to Machiavellian individuals. Girls develop social skills earlier, and are more likely to focus on interpersonal relationships. In this sense, they might be more strategic in their use of bullying. Seemingly, despite earlier inconsistent findings scholars also tend to agree on considering physical and relational

aggression to be more prevalent among boys and girls, respectively (Card, Stucky, Sawalani, & Little, 2008; Crick & Grotpeter, 1995). Considering gender schemas, it could be expected that prestige norms for physical aggression would be more likely to affect boys, whereas prestige norms for relational aggression would affect girls. Our findings do not support these expectations, and show that the social environment affects equally boys and girls. This may depend on the fact that, independent of gender, in adolescence bullying is displayed more through relational (i.e., more sophisticated and tolerated by peers) forms of aggression than through physical aggression, so that norms related to relational aggression are more influential for this behavior. However, our results should not be interpreted as conclusive evidence, since classrooms were mixed and the study design did not differentiate male and female norms. Studies assessing these processes in only-boys and only-girls settings (Velasquez, Santo, Saldarriaga & Lopez, 2010) or considering gender segregation (Faris & Felmlee, 2011) could shed further light on specific gender patterns.

### **Limitations and future directions**

The present study has some limitations that should be considered. Even though it can be considered a fortress to feature a sample of an understudied context, it may also hinder its transferability to other populations. However, studies carried out in populations outside the United States and Europe may allow establishing normative developmental processes and understanding factors that are more culturally idiosyncratic. The longitudinal design is one of the strengths of this study. Nevertheless, not all the measures could be assessed at each time, so that the stability path for bullying was assessed at a previous wave than Machiavellianism and perceived popularity. This is a limitation of the design that needs to be considered and that requests that further studies assessing all the predictors of bullying at the same wave confirm our results. Another limitation was the use of the Kiddie

Mach scale to assess Machiavellianism. Although this scale has been widely used, there is controversy regarding its factorial structure in the literature. In the present study we performed several statistical procedures and a conservative approach by selecting items based on item analyses, adequate fit indices and a coherent factorial structure. We finally decided to use a second order structure of Machiavellianism including 15 from the original 20 items of the scale. Analyses by subscales showed that lack of faith in human nature did not significantly affect bullying; however, prestige norms did affect this association. Considering the statistical procedure that we performed on the scale, we are hesitant to make any definitive conclusions regarding subscales. Further studies should address these inconsistencies.

Despite these limitations, the large size of the sample, along with the longitudinal and multilevel design of the study constitute relevant fortresses of this study. Also, novelties of this study constitute the conceptualization of prestige norms, the assessment of both the overall score and factors of Machiavellianism, and the analyses by gender. In particular, results from this study suggest that in early adolescence individual motives related to personality features are more influential on bullying than motives related to the individual status among peers, and that prestige norms for relational aggression (i.e. a more sophisticate form of aggression) can increase this risk more than prestige norms for the physical aggression. Both these findings provide relevant insights for anti-bullying interventions in adolescence. First, Machiavellianism emerged as an important motive to bully, being more influential than other relevant risk factors related to the social context, such as perceived popularity. Anti-bullying intervention could develop and incorporate actions also addressing this dimension, to decrease the risk for bullying especially among girls. Second, these results suggest that the focus of any intervention should not be only on



individual characteristics that may predict bullying (such as Machiavellianism). Above individual socio-emotional development, interventions should aim at favoring peer cultures in which aggression is not validated and valued; the challenge is then how to build contexts in which positive behaviors and attitudes are prestigious and admired among adolescents. Lastly, results from this study should inform both conceptually and methodology future studies, by considering several factors associated with bullying and integrating them, and also by considering the contexts in which these behaviors unfold.

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Table 1.

Summary of HLM models tested

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
Level 1	$Bullying_{ij} = \beta_0 + r_{ij}$	$Bullying_i = \beta_{0j} + \beta_{1j}(BUL)_{ij} + \beta_{2j}(POP)_{ij} + \beta_{3j}(MACH)_{ij} + \beta_{4j}(GENDER)_{ij} + r_{ij}$	
Level 2			$\beta_{0j} = \gamma_{00} + \gamma_{01} (PRESTIGE\_RELAGG)_j + \gamma_{02} (PRESTIGE\_PHYAGG) + m\mu_{0j}$ $\beta_{1j} = \gamma_{10} + m\mu_{1j}$ $\beta_{2j} = \gamma_{20} + \gamma_{21} (PRESTIGE\_RELAGG) + \gamma_{22} (PRESTIGE\_PHYAGG) + m\mu_{2j}$ $\beta_{3j} = \gamma_{30} + \gamma_{31} (PRESTIGE\_RELAGG) + \gamma_{32} (PRESTIGE\_PHYAGG) + m\mu_{3j}$ $\beta_{4j} = \gamma_{40} + m\mu_{4j}$

Note:

BUL = Individual Bullying at time 1

MACH = Individual Machiavellianism at time 2

POP = Perceived Popularity at time 2

PRESTIGE\_RELAGG = Classroom prestige norm on relational aggression

PRESTIGE\_PHYAGG = Classroom prestige norm on physical aggression

Table 2.

Correlations between study variables, by gender

	Bullying T1	Bullying T3	Mach. T2	Perceived pop. T2
Bullying T1	-	.65**	.36*	.22**
Bullying T3	.48**	-	.25**	.16**
Mach. T2	.26**	.25**	-	.08
Perceived pop. T2	.14**	.07	-.04	-

Note. \*\*  $p < 0.01$ . Boys above diagonal

Table 3.

HLM models predicting bullying at time 3.

	Model 1		Model 2		Model 3	
	Est.	SE	Est.	SE	Est.	SE
<i>Level 1: Adolescents</i>						
Base	1.586**	.028	1.577**	.018	1.577**	.018
Bullying time 1			.478**	.055	.476**	.055
Perceived Popularity			.034	.052	.032	.052
Machiavellianism			.089**	.032	.104**	.026
Gender			-.036	.033	-.019	.031
<i>Level 2: Classrooms</i>						
Prestige norms relational aggression					.010	.059
Prestige norms physical aggression					.035	.087
Prestige norms relational aggression x perceived popularity					-.011	.120
Prestige norms physical aggression x perceived popularity					-.042	.193
Prestige norms relational aggression x Machiavellianism					.246**	.077
Prestige norms physical aggression x Machiavellianism					-.081	.115
Level 1 variance ( $\sigma^2$ )	.19703		.12879		.12804	

Level 2 variance (T)	.01467	.00248	.00323
Deviance	893.90	474.73	483.86
Intraclass correlation	.069		

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Note: \* $p < 0.05$ ; \*\* $p < 0.01$ .

Table 4.

HLM models by Machiavellianism factors predicting bullying at time 3.

predictor	estimate	SE
<i>Level 1: Adolescents</i>		
Dishonesty	.136**	.036
Personal goals	.081**	.020
Lack of faith	.049	.033
Distrust	.724**	.194
<i>Level 2: Classroom</i>		
Dishonesty x prestige norm on relational aggression	.301*	.118
Dishonesty x prestige norm on physical aggression	-.031	.159
Personal goals x prestige norm on relational aggression	.139*	.070
Personal goals x prestige norm on physical aggression	-.042	.101
Lack of faith x prestige norm on relational aggression	.335*	.137
Lack of faith x prestige norm on physical aggression	-.152	.140
Distrust x prestige norm on relational aggression	1.601*	.626
Distrust x prestige norm on physical aggression	-.163	.848

Note: all other effects remained similar from the general model (Table 3) and were omitted to facilitate reading.

Note: \* $p < 0.05$ ; \*\* $p < 0.01$ .



Table 5.

HLM models predicting bullying at time 3: Girls.

	Model 1		Model 2		Model 3	
	Est.	SE	Est.	SE	Est.	SE
<i>Level 1: Adolescents</i>						
Base	1.493**	0.028	1.493**	.024	1.492**	.024
Bullying time 1			.393**	.108	.401**	.108
Perceived popularity			.006	.074	.019	.075
Machiavellianism			.119*	.046	.138**	.044
<i>Level 2: Classrooms</i>						
Prestige norms relational aggression					-.014	.094
Prestige norms physical aggression					-.056	.112
Prestige norms relational aggression x perceived popularity					-.038	.283
Prestige norms physical aggression x perceived popularity					.054	.300
Prestige norms relational aggression x Machiavellianism					.277*	.115
Prestige norms physical aggression x Machiavellianism					-.211	.191
Level 1 variance ( $\sigma^2$ )	.15922		.11385		.11384	
Level 2 variance (T)	.00873		.00498		.00663	

Deviance	359.37	197.96	205.73
Intraclass correlation	.052		

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Note: \* $p < 0.05$ ; \*\* $p < 0.01$ .

Table 6.

HLM models predicting bullying at time 3: Boys.

	Model 1		Model 2		Model 3	
	Est.	SE	Est.	SE	Est.	SE
<i>Level 1: Adolescents</i>						
Base	1.674**	0.038	1.653**	.021	1.652**	.021
Bullying time 1			.546**	.038	.544**	.038
Perceived popularity			.046	.048	.043	.051
Machiavellianism			.050	.036	.064*	.033
<i>Level 2: Classrooms</i>						
Prestige norms relational aggression					.028	.061
Prestige norms physical aggression					-.002	.096
Prestige norms relational aggression x perceived popularity					.080	.132
Prestige norms physical aggression x perceived popularity					-.100	.255
Prestige norms relational aggression x Machiavellianism					.246*	.119
Prestige norms physical aggression x Machiavellianism					-.026	.156
Level 1 variance ( $\sigma^2$ )	.21461		.14033		.14105	
Level 2 variance (T)	.02366		.00004		.00036	

Deviance	504.50	276.34	285.43
Intraclass correlation	.099		

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Note: \* $p < 0.05$ ; \*\* $p < 0.01$ .

Figure 1: Analytical model

