

## BRIEF REPORT

# Longitudinal Associations Between Adolescent Perceived Degree and Style of Parental Prohibition and Internalization and Defiance

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This study examined associations between perceived degree and style of parental prohibition and adolescents' internalization of and oppositional defiance against parental rules in the friendship and moral domain. Relations were investigated in 2 longitudinal adolescent samples (total  $N = 532$ ). Results indicated that perceived style but not degree of prohibition related to overtime changes in internalization and oppositional defiance. Specifically, in line with self-determination theory, autonomy-supportive and controlling styles of prohibiting were found to relate differentially to quality of internalization and oppositional defiance. Cross-lagged analyses indicated that several of these associations were reciprocal. The discussion focuses on the critical role of perceived parental style for communicating prohibitions.

*Keywords:* prohibition, parenting, internalization, defiance, self-determination theory

One important feature of the socialization process is the prohibition of inappropriate behaviors like lying to others or affiliating with drug-using friends. An important question is whether and when parental prohibition of such undesired behaviors is effective. Several socialization scholars (e.g., Barber, Stolz, & Olsen, 2005; Maccoby & Martin, 1983) suggested that a lack of parental regulation creates a permissive climate that makes children more likely to engage in undesirable behaviors. As such, an absence of parental prohibition may relate to more adolescent problem behaviors. In contrast, the expression that “forbidden fruits are appealing” suggests that prohibitions may elicit curiosity and perhaps engagement in the forbidden behaviors. Similarly, as prohibitions involve a restriction of freedom, they might elicit attempts to restore freedom by expressing reactance against the prohibitions (Brehm, 1966). Such counterproductive consequences of prohibition might be particularly likely in adolescence, a life period characterized by an increasing emphasis on individuality (Steinberg, 2001).

*Prohibition* refers to the degree to which parents set limits on their children's behavior, thereby forbidding children to engage in disapproved behaviors. Research on parental prohibition during adolescence is relatively scarce and is limited to specific domains such as friendships (e.g., Mounts, 2001) and media use (e.g.,

Padilla-Walker, 2006). Grounded in self-determination theory (SDT; Deci & Ryan, 2000), in the present study we examined longitudinal and possibly reciprocal associations between perceived degree and style (i.e., autonomy-supportive and controlling) of prohibition and quality of internalization and oppositional defiance in adolescents. Internalization and defiance constitute critical developmental outcomes (Grolnick, Deci, & Ryan, 1997; Grusec & Goodnow, 1994), not only because they relate to adolescent well-being and problem behaviors (e.g., Kochanska & Aksan, 2006; Niemiec et al., 2006) but also because they may elicit particular parental responses, such that a cascading positive or negative spiral may develop.

### Style of Prohibition

Within SDT, a differentiation is made between controlling and autonomy-supportive parenting styles (Grolnick et al., 1997; Soenens & Vansteenkiste, 2010). Controlling parents would enforce compliance with prohibitions through strategies such as (physical) punishment or threats to remove privileges or through internally pressuring strategies such as guilt induction, shaming, and conditional regard. Autonomy-supportive parents would explain the necessity and personal relevance of communicated prohibitions, would solicit the child's perspective, and would accept rather than counter the negative feelings elicited by these prohibitions (Soenens et al., 2007). Several studies have shown that whereas autonomy-supportive parenting relates to well-being and adjustment (e.g., Grolnick et al., 1997), controlling parenting relates to adjustment problems (e.g., Barber et al., 2005) through the satisfaction and frustration of the psychological needs for autonomy (i.e., feeling volitional), competence (i.e., feeling effective), and relatedness (i.e., feeling close; Ahmad, Vansteenkiste, & Soenens, 2013).

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Within SDT, parents' use of a controlling or autonomy-supportive style is differentiated from parents' provision of structure (Grolnick & Pomerantz, 2009; Soenens & Vansteenkiste, 2010). Parental structure concerns the degree to which parents have clear expectations for behavior, monitor their children's progress toward these expectations, and provide assistance when desired so that children feel capable to meet these expectations. Structure shares some conceptual overlap with the notion of behavioral control and is contrasted with chaos, in which case parents do not provide any regulations. When parents prohibit certain behaviors, they limit and, hence, structure their children's behavior. Within SDT, the main point is that the degree of prohibition can be distinguished from the style of prohibition (i.e., autonomy-supportive or controlling) and that especially the style relates to quality of internalization of and defiance against parental norms.

### Internalization and Defiance of Parental Norms

Critical for a persistent adherence to parental prohibitions is the extent to which prohibitions are personally endorsed, that is, internalized (Grusec & Goodnow, 1994). According to SDT, children's reasons for complying with parental prohibitions can be ordered along a continuum of internalization. *External regulation* refers to a compliance with parental rules out of fear of punishment, to avoid the removal of privileges, or to gain rewards and appreciation. *Introjected regulation* constitutes partial internalization, as the reason for adhering to parental norms is understood. Yet, parental norms are still followed with a sense of pressure, now coming from demanding forces inside the child, such as feelings of self-criticism, guilt, or contingent self-worth. A more fully internalized mode of functioning is achieved when children personally endorse and identify with parental norms (i.e., identified regulation). Various studies have shown that increasing levels of internalization relate to a host of positive outcomes, including long-term persistence, well-being, and less problem behavior (Deci & Ryan, 2000; Vansteenkiste, Niemiec, & Soenens, 2010). Further, whereas a controlling socialization style has been found to relate to low-quality internalization, an autonomy-supportive style has been found to predict high-quality internalization (e.g., Deci, Eghrari, Patrick, & Leone, 1994).

However, children may also defy instead of internalize parental norms. We coin the term *oppositional defiance* to refer to a blunt resistance against parental authority. Oppositional defiance constitutes an externally driven type of regulation as the oppositional behavior is determined by the parental rules against which one reacts (Deci & Ryan, 1985). Although defiant children act independently, as they are differentiating themselves from their parents, their independent functioning does not engender feelings of psychological freedom and volition (Van Petegem, Vansteenkiste, & Beyers, in press). This is because their noncompliance is not grounded in a thoughtful consideration of the imposed norms themselves. The concept of oppositional defiance has received little explicit empirical attention within SDT or in adolescent psychology, but it does figure in theorizing and empirical work on moral development in toddlers, where it is treated as an active but rather immature type of noncompliance that is predicted by the maternal use of power-assertive techniques (Kochanska & Aksan, 2006).

### The Present Research

In this study, we examined whether reciprocal associations would exist between perceived degree and style of prohibition and quality of internalization and oppositional defiance. To increase the generalizability of our findings, we tested our proposed reciprocal model in the domains of morality and friendships. This was deemed important because some socialization scholars (e.g., Grusec & Davidov, 2010) have argued for a domain-specific approach to socialization, suggesting that certain socialization practices that are beneficial in one domain are not necessarily beneficial in another domain.

We expected autonomy support to relate to increases in identified regulation of parental rules and to decreases in oppositional defiance because such a style is conducive to the psychological needs for autonomy, competence, and relatedness. In contrast, because a controlling style is antithetical to the psychological needs, we expected this parenting style to increase adolescents' rigid and externally driven adherence to parental norms or the blunt defiance of these norms altogether. Given the presumed universal nature of the psychological needs in SDT, we predicted these effects would occur both in the friendship and moral domain. In contrast, from a domain-specific parenting approach, it could be argued that although controlling strategies might be harmful in the friendship domain, as being pressuring threatens adolescents' private choices, controlling strategies might not yield negative consequences in the moral domain because such strategies might be seen as legitimate in this domain (Padilla-Walker & Carlo, 2006).

Based on transactional socialization models (Sameroff & Fiese, 2000), we investigated the possibility of reciprocal associations between the parenting constructs and the developmental outcomes. Specifically, we anticipated child effects on the perceived prohibition styles because low-quality internalization and oppositional defiance may elicit inadequate parental responses, including controlling behavior. When repeatedly facing a defying child, parents might lose patience and impose prohibitions more harshly. In contrast, high-quality internalization of rules and low levels of oppositional defiance may create more opportunities for parents to respond in an autonomy-supportive fashion. This is because the willing compliance with parental prohibitions would lead the parent to be more constructive and to provide a further justification (i.e., rationale) for the importance of the communicated prohibitions.

As for the degree of prohibition, we hypothesized that the effect of prohibition per se might depend on the domain involved, with prohibition in the friendship domain relating to low internalization and high defiance and with prohibition in the moral domain yielding the opposite pattern of associations (Smetana, 2005). We did not have clear hypotheses about whether internalization and oppositional defiance would reciprocally affect the degree of prohibition. Parents may react to low-quality internalization and oppositional defiance by increasing their degree of prohibition in an attempt to change the adolescent's behavior. Yet, they might also give up on their attempts to correct the behavior because they feel they have lost impact on their adolescent (Kerr, Stattin, & Pakalnskiene, 2008).

## Method

### Participants and Procedure

Data were collected in secondary schools at both waves. At Time 1, we obtained active informed consent from the adolescents and passive informed consent from their parents. It was clarified that participation was voluntary, that confidentiality was guaranteed, and that participation could be discontinued at any time. Less than 5% refused participation. Questionnaires took about 45 min to complete. The procedure of both studies was approved by both the Ethical Committee of our university and the school principals.

In Sample 1 (representing the friendship domain), 228 adolescents (mean age = 16.46 years,  $SD = 0.85$ ; 45% boys) participated at Time 1, of which 202 (89%) participated again at Time 2 (i.e., 1 year later). In Sample 2 (representing the moral domain), 304 adolescents (mean age = 16.54 years,  $SD = 0.70$ ; 55% boys) participated at Time 1, of which 180 (59%) participated again at Time 2. About half of the participants of Sample 1 (47%) and the majority of the participants of Sample 2 (91%) followed a technical education track. The remaining participants followed an academic track.

We compared participants with and without complete data using Little's (1988) missing completely at random (MCAR) test, which produced a nonsignificant normed chi square value ( $\chi^2/df$ ) of 1.47 in Sample 1 and 1.68 in Sample 2, indicating that the data were likely to be missing at random. Yet, it should be stressed that unmeasured third variables might still have caused an important selection bias that cannot be captured in these analyses. In light of the nonsignificant MCAR tests, it was considered appropriate to impute missing values for nonparticipating individuals at Time 2 through a full imputation maximum likelihood procedure (FIML, Muthén & Muthén, 2007).

### Measures

Responses were made on 5-point Likert scales ranging from 1 (*fully disagree*) to 5 (*fully agree*).

**Degree and style of prohibition.** In the friendship domain, four items tapped into the degree of maternal prohibition (Soenens,

Vansteenkiste, & Niemiec, 2009; e.g., "My mother does not allow me to hang out with some friends"). For the purpose of this study, we adjusted this scale to also tap into four immoral behaviors (i.e., lying, acting selfishly, damaging another person's belongings, and stealing). After each prohibiting statement, the following rather neutral question was added: "If your mother would prohibit this, how would she make this clear to you?" (see Soenens et al., 2009). Next, each prohibiting statement was followed by one item tapping into an autonomy-supportive style (resulting in four items in total; e.g., "My mother would give a meaningful explanation for why she thinks this is important"), one item tapping into an externally controlling style (resulting in four items in total; e.g., "My mother would yell at me and tell me that otherwise I will be punished"), and one item tapping into an internally controlling style (resulting in four items in total; e.g., "My mother would say she will be very disappointed with me if I disobey"). In general, the same items were used in both domains to tap into style of prohibition, although a few smaller adjustments were made to make the items fit the preceding prohibition statement. To examine the internal structure, we performed four series of exploratory factor analyses (i.e., two samples in two waves) using promax rotation on the items tapping into degree and style of prohibition. These four analyses produced very similar results that can be provided upon request. Across samples and waves, three factors with an eigenvalue greater than 1 were retained, which together explained between 56% and 61% of the variance, with item loadings varying between .38 and .94. After rotation, these factors could clearly be interpreted as representing degree of prohibition, an autonomy-supportive style, and a controlling style, with both externally and internally controlling items loading on the latter factor. Across samples and waves, Cronbach's alphas for the measures varied between .63 and .89 (see Tables 1 and 2).

### Quality of internalization and oppositional defiance.

Participants' reasons for following parental rules in both domains were assessed with the Self-Regulation Questionnaire-Parental Rules (Soenens et al., 2009). The same set of items was used to assess adolescents' reasons for following maternal moral rules. For example, in the moral domain, adolescents were presented with the following information:

Table 1

*Friendship Domain: Means, Standard Deviations, Internal Consistencies, and Correlations Among the Variables at Both Waves in Sample 1*

Variable	<i>M</i>	<i>SD</i>	$\alpha$	1	2	3	4	5	6	7	8	9	10	11
1. T1 Degree of prohibition	1.88	0.78	.70											
2. T1 Autonomy-supportive style	3.59	1.16	.88	.04										
3. T1 Controlling style	1.63	0.73	.87	.49**	-.11									
4. T1 Identified regulation	2.79	1.07	.84	-.01	.24**	-.07								
5. T1 Introjected regulation	2.16	0.83	.84	.03	.04	.17*	.53**							
6. T1 External regulation	1.99	0.93	.87	.16*	-.22**	.52**	.05	.53**						
7. T2 Degree of prohibition	1.76	0.65	.63	.42**	.06	.25**	.08	.15*	.14*					
8. T2 Autonomy-supportive style	3.59	1.11	.89	-.12	.43**	-.21**	.26**	.08	-.21**	-.05				
9. T2 Controlling style	1.65	0.73	.89	.18*	-.08	.49**	-.04	.18*	.39**	.54**	-.14			
10. T2 Identified regulation	2.87	1.15	.93	-.07	.29**	-.07	.52**	.30**	.03	.13	.36**	.01		
11. T2 Introjected regulation	2.04	0.85	.86	-.05	.19**	.04	.37**	.43**	.23**	.11	.16*	.17*	.60**	
12. T2 External regulation	1.87	0.85	.86	.16*	-.05	.45**	.03	.26**	.49**	.32**	-.20**	.59**	.08	.47**

Note. T = Time.

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

Table 2

*Moral Domain: Means, Standard Deviations, Internal Consistencies, and Correlations Among the Variables at Both Waves in Sample 2*

Variable	<i>M</i>	<i>SD</i>	$\alpha$	1	2	3	4	5	6	7	8	9	10	11	12	13
1. T1 Degree of prohibition	2.29	0.83	.79													
2. T1 Autonomy-supportive style	3.32	1.09	.86	-.02												
3. T1 Controlling style	2.48	0.79	.76	.28**	-.09											
4. T1 Identified regulation	3.34	0.85	.89	.10	.52**	-.01										
5. T1 Introjected regulation	2.95	0.91	.85	.12*	.36**	.12*	.69**									
6. T1 External regulation	2.71	0.83	.78	.24**	-.18**	.44**	.05	.32**								
7. T1 Oppositional defiance	1.90	0.83	.85	.04	-.36**	.21**	-.53**	-.38**	.16**							
8. T2 Degree of prohibition	2.29	0.95	.87	.48**	.03	.05	.03	-.02	.10	.04						
9. T2 Autonomy-supportive style	3.35	1.08	.87	.05	.43**	-.20	.42**	.31**	-.14	-.28**	.24**					
10. T2 Controlling style	2.60	0.81	.81	.16*	-.19*	.35**	-.13	-.04	.30**	.17*	.20**	-.05				
11. T2 Identified regulation	3.57	0.84	.90	.09	.41**	-.15	.56**	.35**	-.21**	-.33**	.08	.50**	.05			
12. T2 Introjected regulation	3.17	0.81	.83	.15*	.30**	.01	.37**	.45**	.12	-.21**	.13	.35**	.30**	.62**		
13. T2 External regulation	2.67	0.79	.76	.21**	-.23**	.22**	-.16*	.05	.44**	.20**	.11	-.18*	.42**	-.01	.33**	
14. T2 Oppositional defiance	1.82	0.78	.86	.08	-.33**	.28**	-.33**	-.22**	.19*	.42**	.07	-.22**	.31**	-.40**	-.16*	.32**

Note. T = Time.

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

Sometimes mothers set rules for bad or unacceptable behavior, such as lying to others, stealing, and so on. You may have different reasons for following such rules. Please rate the following reasons for following your mother's rules concerning bad or unacceptable behavior:

I follow my mother's rules concerning bad behavior because . . .

Participants then rated three types of regulation: external regulation (six items; e.g., "otherwise I will be punished"), introjected regulation (six items; e.g., "it makes me feel proud about myself"), and identified regulation (six items; e.g., "I find these rules personally meaningful"). In addition, in Sample 2, participants were provided with four self-constructed items assessing oppositional defiance (e.g., "I rebel against my mother's rules for unacceptable behavior"). These items were inspired by the psychological reactance measure of Shen and Dillard (2005). To examine the factorial validity of the scale, we performed four separate exploratory factor analyses (i.e., two samples in two waves) using promax rotation, the results of which can be provided upon request. The retained factors (three for the friendship domain and four for the moral domain) all had an eigenvalue greater than 1, explaining between 62% and 67% of the variance across the two waves. Across both waves, in the friendship domain, 33 out of the 36 items (18 items assessed twice) loaded on their intended factor (i.e., external, introjected, and identified regulation). In the moral domain, 40 out of the 44 items (22 items assessed twice) loaded on their intended factor (i.e., external, introjected, and identified regulation and oppositional defiance). Consistent with Soenens et al. (2009), we then created three (for the friendship domain) or four (for the moral domain) subscales by averaging the theoretically hypothesized items of each subscale. Internal consistencies varied between .76 and .93 across domains and waves (see Tables 1 and 2).

## Results

### Background Characteristics and Correlations

First, we assessed gender differences and mean-level changes in the study variables through repeated-measures analysis of vari-

ance, with gender as a between-subjects variable, measurement time as a within-subject variable, and the study variables as dependent variables. In Sample 1 (friendship domain), neither the multivariate gender main effect,  $F(6, 171) = 1.60$ ,  $ns$ , nor the Gender  $\times$  Time interaction,  $F(6, 171) = 1.03$ ,  $ns$ , reached significance. However, there was a significant time effect,  $F(6, 171) = 4.07$ ,  $p < .001$ ,  $\eta^2 = .13$ , with degree of prohibition,  $F(1, 171) = 8.77$ ,  $p < .01$ ,  $\eta^2 = .05$ , introjected regulation,  $F(1, 171) = 3.97$ ,  $p < .05$ ,  $\eta^2 = .02$ , and external regulation,  $F(1, 171) = 5.46$ ,  $p < .001$ ,  $\eta^2 = .03$ , decreasing over time. In Sample 2 (moral domain), there was a significant gender difference at the multivariate level,  $F(7, 161) = 3.93$ ,  $p < .001$ ,  $\eta^2 = .15$ , but neither measurement time,  $F(7, 161) = 1.17$ ,  $ns$ , nor the Gender  $\times$  Time interaction,  $F(7, 161) = 2.05$ ,  $ns$ , was significant. Gender differences occurred in degree of prohibition,  $F(1, 167) = 11.18$ ,  $p < .01$ ,  $\eta^2 = .06$ , perceived autonomy-supportive style,  $F(1, 167) = 5.13$ ,  $p < .05$ ,  $\eta^2 = .03$ , identified regulation,  $F(1, 167) = 8.46$ ,  $p < .01$ ,  $\eta^2 = .05$ , introjected regulation,  $F(1, 167) = 7.02$ ,  $p < .01$ ,  $\eta^2 = .04$ , and oppositional defiance,  $F(1, 167) = 10.76$ ,  $p < .01$ ,  $\eta^2 = .06$ . Girls scored lower on degree of prohibition ( $M = 1.13$ ) and oppositional defiance ( $M = 1.65$ ) and higher on perceived autonomy support ( $M = 3.56$ ), identified regulation ( $M = 3.69$ ), and introjected regulation ( $M = 3.27$ ) than boys (respectively,  $M_s = 1.52, 1.96, 3.26, 3.37$ , and  $2.98$ ). The correlations among the study variables at both waves can be found in Table 1 (for the friendship domain) and Table 2 (for the moral domain).

### Cross-Lagged Analyses

To test the longitudinal associations between degree and style of prohibition, internalization, and oppositional defiance, we tested a series of structural equation models (SEM) using path analysis. In each model, the bidirectional effects between the parenting constructs and one particular type of internalization or oppositional defiance were examined, thereby controlling for (a) the stability in the constructs (i.e., autoregressive paths) and (b) within-time associations between the constructs. In each model, we controlled for age, gender, and educational background. All SEM-analyses were conducted with Mplus Version 5.1 (Muthén & Muthén, 2007). To



assess model fit, we used the chi-square-statistic, the comparative fit index (CFI), the standardized root-mean-square residual (SRMR), and the root-mean-square error of approximation (RMSEA). A nonsignificant chi-square value, a CFI > .95, an SRMR < .08, and a RMSEA < .06 were used as criteria for good model fit (Hu & Bentler, 1999).

The model including degree and style of prohibition and identified regulation is depicted in Panel A of Figure 1,  $\chi^2(6) = 8.32$ , *ns*; CFI = .99; SRMR = .03; and RMSEA = .04 in the friendship domain and  $\chi^2(6) = 9.37$ , *ns*; CFI = .98; SRMR = .03; and RMSEA = .04 in the moral domain. Across both domains, there is clear evidence for bidirectional associations between an autonomy-supportive style and identified regulation, with identified regulation in the friendship domain yielding an additional overtime increase in degree of prohibition. The model including introjected regulation,  $\chi^2(6) = 9.95$ , *ns*; CFI = .98; SRMR = .03; and RMSEA = .05 in the friendship domain and  $\chi^2(6) = 10.89$ , *ns*; CFI = .97; SRMR = .03; and RMSEA = .05 in the moral domain is depicted in Panel B of Figure 1. Across domains, autonomy support related to an overtime increase in introjected regulation, while introjected regulation predicted an additional increase in degree of prohibition in the friendship domain. As shown in Panel C of Figure 1, in the friendship domain, the model with external regulation,  $\chi^2(6) = 6.88$ , *ns*; CFI = 1.00; SRMR = .02; and RMSEA = .03, showed a bidirectional overtime relation between control and external regulation. In addition, external regulation predicted a decrease in autonomy support. In contrast, in the moral domain,  $\chi^2(6) = 7.25$ , *ns*; CFI = .99; SRMR = .03; and RMSEA = .03, none of the cross-lagged paths reached significance. Finally, in the moral domain, evidence was obtained for bidirectional effects in the model including oppositional defiance,  $\chi^2(6) = 7.80$ , *ns*; CFI = .99; SRMR = .02; and RMSEA = .03, with autonomy support predicting overtime decreases in oppositional defiance and oppositional defiance predicting overtime decreases in autonomy support (Panel D of Figure 1). In addition, control predicted overtime increases in oppositional defiance.<sup>1</sup>

### Supplementary Analyses

Although degree of prohibition as such did not predict overtime changes in internalization or oppositional defiance, the effects may be qualified by perceived style of prohibition (i.e., interaction). To this end, we multiplied the *z*-scored variables for degree and style prohibition and inserted them as predictors of change in internalization and oppositional defiance. Across the samples and across the four outcomes, only one out of the 14 possible interaction terms reached significance ( $p = .02$ ), suggesting that the effects of degree of prohibition did not depend on prohibition style. Analogously, the effects of prohibition style applied regardless of degree of prohibition.<sup>2</sup>

### General Discussion

Grounded in SDT (Deci & Ryan, 2000), the present research examined longitudinal reciprocal relations between perceived degree and style of prohibition and quality of internalization of and oppositional defiance against maternal prohibitions in the friendship and moral domain. Four findings should be highlighted.

First, in direct comparisons of the longitudinal correlates of perceived degree and style of prohibition, style of prohibition

seems to carry most of the effects. In contrast, degree of prohibition does not seem to matter when one is predicting children's endorsement of or oppositional defiance against parental rules. This finding is striking given that children of permissive parents, who are likely to refrain from communicating prohibitions, have been found to be more at risk for problem behavior (Steinberg, 2001). To further explore this issue, investigators might find person-centered approaches useful for detecting varying combinations of degree and styles of prohibition. Such analyses would help unravel the question of whether the combination of prohibition and autonomy support is related to high-quality internalization and less defiance compared with other combinations.

Indeed, a second important finding concerns the different longitudinal effects of an autonomy-supportive and controlling prohibition style. Across domains, autonomy support predicted an increase in identified regulation. Apparently, when parents provide a meaningful rationale or actively solicit their children's opinion when communicating prohibitions, children perceive these limits as more informational and relevant such that they can more easily endorse them. These findings suggest that limit setting is not necessarily antithetical to adolescent autonomy, at least when limits are conveyed in an autonomy-supportive fashion. Notably, for such a conclusion to be drawn, adolescent autonomy needs to be defined as the experience of volition and self-endorsement rather than as independent functioning (Deci & Ryan, 2000; Van Petegem et al., *in press*). By definition, limit setting precludes independent action. However, limits that are well explained and agreed upon through dialogue can be internalized, allowing youngsters to maintain a sense of volition while respecting these limits. Because autonomy in SDT does not denote independence, autonomy support does not imply granting unlimited freedom and being permissive. Indeed, autonomy-supportive parents would set limits, yet, in doing so they would take care not to compromise adolescents' sense of volition (Soenens & Vansteenkiste, 2010).

In contrast with autonomy support, perceived controlling prohibition style related to an overtime increase in pressured functioning, although its manifestation differed by domain. Specifically, in the moral domain, control related to an increase in oppositional defiance. This finding is in line with that by Chartrand, Dalton, and Fitzsimons (2007), who demonstrated that the nonconscious activation of controlling significant others led participants to pursue a goal that directly opposed the significant other's wishes and with that by Padilla-Walker and Carlo (2006), who reported that parental yelling and punishment—two responses that would be considered controlling from the SDT perspective—were related to feelings of anger in

<sup>1</sup> For the friendship domain, we repeated the analyses including perceived responsiveness as an additional predictor to examine whether the observed effects would be reduced or canceled. Responsiveness did not relate to overtime changes in internalization and oppositional defiance, and all observed effects remained significant.

<sup>2</sup> To examine whether the observed relations between degree and style of prohibition and the outcomes would differ by gender and educational track, we performed additional regression analyses, including the interaction between the parenting measures and these potential moderators. Across the samples, only one out of the 48 possible interaction terms reached significance, suggesting that the observed effects of degree and style of prohibition apply to both boys and girls and occur regardless of educational track.

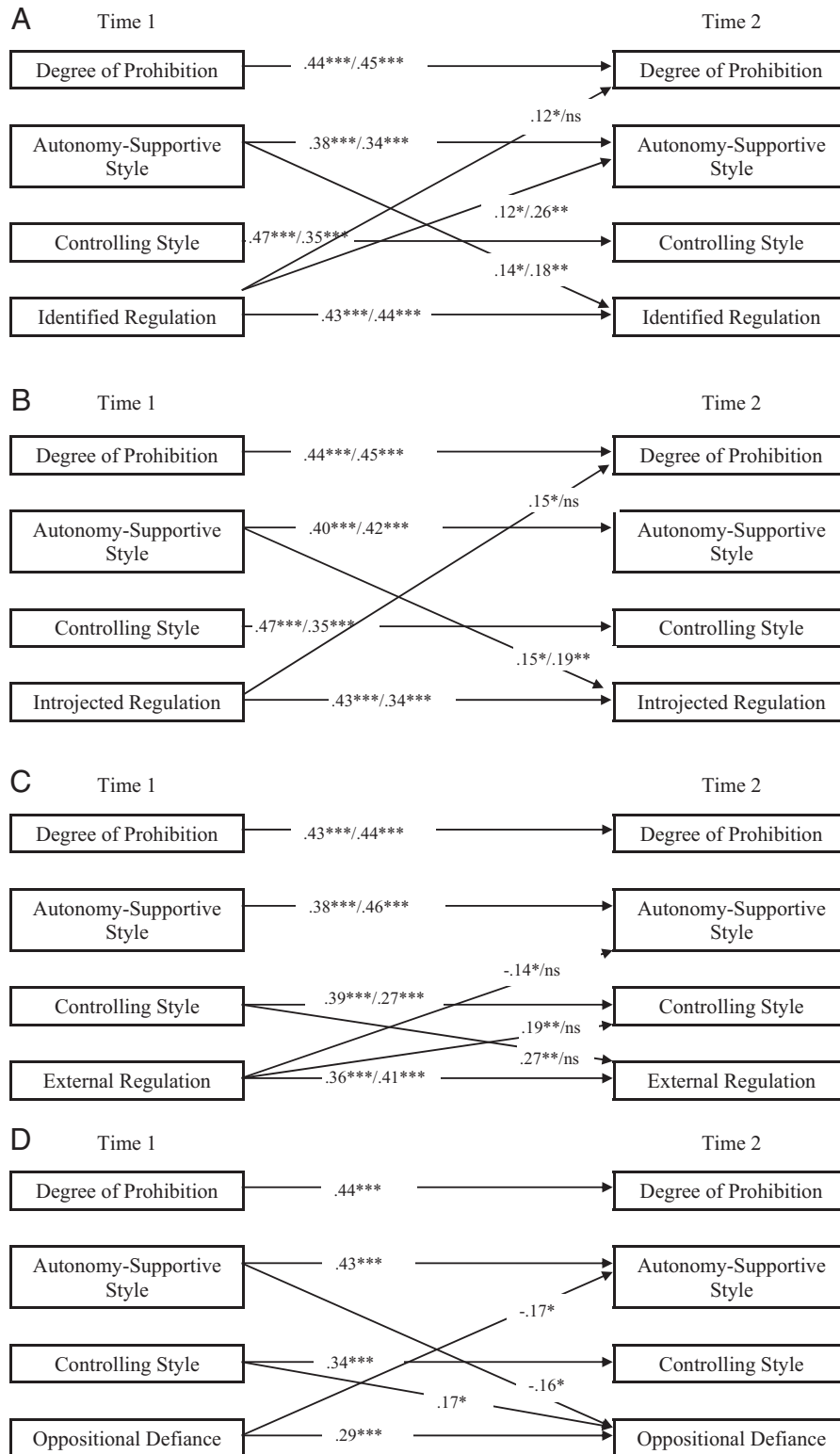


Figure 1. Results of cross-lagged analyses relating degree and style of prohibition to identified regulation (Panel A), introjected regulation (Panel B), external regulation (Panel C), and oppositional defiance (Panel D). Coefficients are standardized path coefficients. The first value refers to the friendship and the second value to the moral domain. For increased clarity, within-time correlations, nonsignificant paths, and gender and age effects are not shown. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

adolescents. However, in the friendship domain, perceived parental control related to an increase in externally pressured compliance. These domain differences are hard to explain. From a social domain theory perspective (Smetana, 2005), one might expect adolescents to rebel particularly strongly against controlling prohibitions in the friendship domain, as adolescents increasingly seek to expand their personal boundaries and, hence, are more sensitive to parental interference concerning personal issues. Yet, the current pattern of findings needs to be interpreted with caution and warrants replication, especially given that we did not assess oppositional defiance in the friendship domain and that both samples differed on a number of background characteristics (i.e., gender and educational track). To remedy the latter problem, matched samples or within-sample comparison will be required if researchers are to provide a more definitive answer as to whether the domains themselves play a critical role.

In spite of this caveat, the similarity between both domains is perhaps more striking than the difference. In neither domain did control emerge as a positive predictor of internalization. This finding would perhaps not be predicted by scholars advocating a domain-specific parenting approach (e.g., Grusec & Davidov, 2010). With such an approach, one might argue that the use of pressure is justified and even beneficial in the moral domain. In contrast, from the SDT perspective, perceived controlling prohibitions are said to thwart the universal psychological needs for autonomy, competence, and relatedness (e.g., Ahmad et al., 2013), which are operative across life domains. The frustration of these needs should come with a cost, even in the moral domain where parents may find it more acceptable to use coercion.

Third, apart from parent effects, a number of child effects also emerged, suggesting that the relation between perceived style of prohibition and quality of internalization and oppositional defiance can best be considered bidirectional. Specifically, perceived autonomy support not only contributed to identified regulation but also resulted from it. Similarly, control was bidirectionally, related to external regulation in the friendship domain. Together, consistent with bidirectional accounts of parenting dynamics (e.g., Kerr et al., 2008), these findings suggest that parents and their adolescent might get caught in an increasingly positive or negative vicious cycle.

A fourth and rather unexpected result that deserves attention is that in both domains, perceived autonomy support predicted an increase in an internally pressured (i.e., introjected) form of regulation. A similar finding was reported in the academic domain by Zhou, Ma, and Deci (2009) among rural Chinese students. Given that autonomy-supportive parents and their children have a high-quality relation (Niemic et al., 2006), for children of autonomy-supportive parents, guilt might be a more salient motive for complying with the parents' rules. Alternatively, feelings of internally pressured loyalty might arise because autonomy-supportive parents clearly put effort, time and energy in their childrearing in general and in the communication of norms and rules in particular. Children are likely to sense this parental effort expenditure, and, as a result, might feel guilty for not respecting their parents' norms more readily.

## Limitations and Future Directions

Because we assessed the parenting constructs using adolescent reports, future researchers should replicate our findings using parent reports as well as other methodologies (e.g., observations). In doing so, degree of prohibition could be operationalized in terms of its frequency and salience rather than in terms of degree. Next, it should be noted that the fairly high attrition rate in Sample 2 may have biased our results and that the findings are thus in need of replication. Another critical issue involves examining whether the observed relations would generalize to youngsters at risk for problem behavior, as it has been suggested that such youngsters might benefit from moderate levels of parental pressure (Mason, Cauce, Gonzales & Hiraga, 1996). In contrast, from an SDT perspective, it can be hypothesized that even among this at-risk population, any prohibition that is *perceived* to be controlling may hamper the internalization process and elicit defiance. Given that we approached the topic of parental prohibition exclusively from a SDT perspective, investigators conducting future work may rely on different perspectives (e.g., configurational approach; Maccoby & Martin, 1983) or different parenting dimensions (e.g., confrontational and coercive power assertion; Baumrind, 2012) to shed a different or complementary light on this issue. Finally, from the SDT perspective, it should be noted that defiance is not by definition oppositional and, hence, more controlled in nature, as some adolescents, after reflection and negotiation with their parents, may willingly decide to not comply with parental prohibitions. Such reflective defiance could be studied in conjunction with oppositional defiance in the future.

## Conclusion

Parental prohibitions make children aware of the rules and norms prevailing in one's family and the society at large and represent an important tool to socialize children. Yet, parents do not just want their children to be aware of these prohibitions but also want their children to willingly accept them and refrain from defiance. What matters in achieving this goal is not so much the degree to which these limits are set, but the style of communicating these prohibitions. Whereas an autonomy-supportive approach seems to yield the desired internalization effects, a controlling prohibition style seems to hamper the internalization process and even lead to defiance. The current SDT-based analysis of internalization and oppositional defiance is potentially important because although these processes often are portrayed as essential dynamics in the effects of socialization literature (e.g., Grusec & Goodnow, 1994; Maccoby & Martin, 1983; Steinberg, 2001), there is little explicit empirical work on these processes in the literature on adolescent development. In the future, researchers may examine the intervening role of these processes in associations between parenting and actual adolescent adjustment and problem behavior.

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