

UNIVERSITÉ DU QUÉBEC À MONTRÉAL

THE SOCIAL FAILURE MODEL:
DO CLASSROOM NORMS PLAY A ROLE IN
ANTISOCIAL BEHAVIOR AND
DEPRESSIVE SYMPTOMS?

ESSAY SUBMITTED
AS A PARTIAL REQUIREMENT
OF THE DOCTORATE IN PSYCHOLOGY

BY
AMY BURNINGHAM

NOVEMBER 2024

UNIVERSITÉ DU QUÉBEC À MONTRÉAL

LE MODÈLE DE L'ÉCHEC SOCIAL:
LES NORMES DES SALLES DE CLASSE JOUENT-ELLES
UN RÔLE DANS LES COMPORTEMENTS ANTISOCIAUX
ET LES SYMPTÔMES DÉPRESSIFS?

ESSAI
PRÉSENTÉ
COMME EXIGENCE PARTIELLE
DU DOCTORAT EN PSYCHOLOGIE

PAR
AMY BURNINGHAM

NOVEMBRE 2024

UNIVERSITÉ DU QUÉBEC À MONTRÉAL
Service des bibliothèques

Avertissement

La diffusion de cet essai doctoral se fait dans le respect des droits de son auteur, qui a signé le formulaire *Autorisation de reproduire et de diffuser un travail de recherche de cycles supérieurs* (SDU-522 – Rév.04-2020). Cette autorisation stipule que «conformément à l'article 11 du Règlement no 8 des études de cycles supérieurs, [l'auteur] concède à l'Université du Québec à Montréal une licence non exclusive d'utilisation et de publication de la totalité ou d'une partie importante de [son] travail de recherche pour des fins pédagogiques et non commerciales. Plus précisément, [l'auteur] autorise l'Université du Québec à Montréal à reproduire, diffuser, prêter, distribuer ou vendre des copies de [son] travail de recherche à des fins non commerciales sur quelque support que ce soit, y compris l'Internet. Cette licence et cette autorisation n'entraînent pas une renonciation de [la] part [de l'auteur] à [ses] droits moraux ni à [ses] droits de propriété intellectuelle. Sauf entente contraire, [l'auteur] conserve la liberté de diffuser et de commercialiser ou non ce travail dont [il] possède un exemplaire.»

ACKNOWLEDGEMENTS

Many individuals have contributed in different ways to the completion of this doctoral essay. First and foremost, I wish to express my deepest gratitude to Dr. Mara Brendgen for giving me the opportunity to pursue a doctoral degree in psychology under her supervision. I am particularly grateful for her insightful feedback, thoughtful encouragement, availability and patience, all of which have been instrumental in the completion of this essay. I would also like to thank my fellow authors, Dr. Frank Vitaro and Dr. Lyse Turgeon for their constructive feedback on my article and for allowing me to use their data bank for my analyses. I am also deeply indebted to Alain Girard, statistics wizard, for his precious time and knowledge. I would also like to acknowledge Dr. Thérèse Bouffard and Dr. François Poulin for their helpful feedback on my essay proposal.

Thank you to my friends and family. Your support, encouragement and companionship provided me with the motivation and strength to persevere to the end of the doctoral program. A special note of appreciation goes to my partner, Julien. Your love, patience and unwavering belief in me have been a constant source of strength throughout this adventure. Your support in managing our family responsibilities gave me the space and time to focus on my studies. Thank you to my wonderful sons, Gabriel, Benjamin and Charles, for filling our lives with love and joy these past years. I would also like to honor my dad, who instilled in me a strong sense of discipline and work ethic, and who would have been incredibly proud to see me achieve this goal.

To all of you, I extend my heartfelt appreciation and gratitude. This accomplishment would not have been possible without your support and encouragement.

TABLE OF CONTENTS

| | |
|---|-----|
| LIST OF TABLES..... | iii |
| RÉSUMÉ..... | iv |
| SUMMARY..... | vi |
| CHAPTER I | |
| INTRODUCTION..... | 1 |
| 1.1 Stability and Change of Antisocial Behavior..... | 1 |
| 1.2 Depressive Symptoms..... | 3 |
| 1.3 The Social Failure Model..... | 4 |
| 1.4 Social Norms..... | 6 |
| 1.5 Classroom Norms as a Moderator in the Stability of Antisocial Behavior and its Link With Depressive Symptoms..... | 8 |
| 1.6 Sex and Grade Differences..... | 10 |
| 1.7 General Objectives of the Doctoral Essay..... | 11 |
| CHAPTER II | |
| THE SOCIAL FAILURE MODEL: DO CLASSROOMS PLAY A ROLE IN THE DEVELOPMENT OF ANTISOCIAL BEHAVIOR AND DEPRESSIVE SYMPTOMS? (SCIENTIFIC ARTICLE, RESEARCH ON CHILD AND ADOLESCENT PSYCHOPATHOLOGY)..... | 13 |
| Résumé..... | 14 |
| Abstract..... | 15 |
| Introduction..... | 16 |
| Method..... | 23 |
| Results..... | 28 |
| Discussion..... | 31 |
| CHAPTER III | |
| CONCLUSION..... | 40 |
| 3.1 Summary and Discussion of Results..... | 40 |
| 3.1.1 The Role of Social Norms in the Development and Stability of Antisocial Behavior..... | 42 |
| 3.1.2 The Role of Social Norms in the Link Between Antisocial Behavior and Depressive Symptoms..... | 44 |
| 3.2 Study Strengths and Limitations and Directions for Future Research..... | 48 |
| 3.3 Clinical Implications..... | 51 |
| 3.4 Conclusion..... | 53 |
| APPENDIX A INFORMATION AND CONSENT FORMS | 55 |
| APPENDIX B ETHICS CERTIFICATE..... | 57 |
| APPENDIX C MEASUREMENT INSTRUMENTS..... | 58 |
| REFERENCES..... | 63 |

LIST OF TABLES

| | |
|---|----|
| Table 2.1 Bivariate correlations between individual-level variables for boys and girls..... | 37 |
| Table 2.2 Multilevel regression analyses predicting T2 antisocial behavior..... | 38 |
| Table 2.3 Multilevel regression analyses predicting T2 depressive symptoms..... | 39 |

RÉSUMÉ

Les comportements antisociaux à l'enfance peuvent interférer avec le développement psychosocial normal et constituent un facteur de risque important pour les troubles de santé mentale intériorisés, dont les symptômes de dépression (Capaldi & Stoolmiller, 1999; Fontaine et al., 2019; Wolff & Ollendick, 2006). Des études antérieures ont démontré que les salles de classe sont des contextes importants pour le développement socio-émotionnel des jeunes (Veenstra et al., 2018). En classe, les élèves créent des normes sociales en modélisant, en renforçant ou en punissant certains comportements (Bukowski et al., 2007). Ainsi, ces normes peuvent jouer un rôle non seulement dans l'évolution des comportements antisociaux des jeunes, mais également dans l'association entre ces comportements et des symptômes dépressifs.

L'objectif principal de cet essai doctoral était d'étudier le rôle des différents types de normes de classe sur la stabilité des comportements antisociaux des jeunes et sur l'association longitudinale entre les comportements antisociaux et les symptômes dépressifs. Un deuxième objectif de cet essai était d'examiner si l'effet modérateur des normes dans ces associations changeait en fonction de l'année scolaire ou du sexe des élèves. L'échantillon de l'étude est composé d'élèves de 4^e à 6^e année qui ont rempli des questionnaires à l'automne et au printemps d'une même année scolaire. Les normes descriptives ont été opérationnalisées comme la moyenne des comportements antisociaux au sein du groupe de sexe à l'intérieur de la classe, tandis que les normes de statut ont été opérationnalisées comme la corrélation entre le comportement antisocial et la préférence sociale au sein du groupe de sexe à l'intérieur de la classe.

Les résultats de l'étude ont démontré que la stabilité des comportements antisociaux au niveau individuel était modérée par les normes descriptives plutôt que par les normes de statut lorsque les deux normes étaient incluses simultanément dans les analyses statistiques. Plus précisément, l'association entre les comportements antisociaux au début et à la fin de l'année scolaire était plus forte dans les classes où les normes descriptives étaient élevées (c.-à-d. où les comportements antisociaux étaient plus fréquents) comparativement aux classes avec des normes descriptives neutres ou faibles (c.-à-d. où la fréquence des comportements antisociaux se situait dans la moyenne ou en dessous de la moyenne, respectivement). Les résultats ont également démontré que les normes de statut, pour leur part, jouaient un rôle dans l'association entre le comportement antisocial initial et les symptômes dépressifs ultérieurs. Plus spécifiquement, les jeunes ayant plus de comportements antisociaux dans les classes avec des normes de statut défavorables (c.-à-d. une corrélation négative entre les comportements antisociaux et la préférence sociale) présentaient des symptômes dépressifs plus marqués à la fin de l'année. En revanche, l'association entre les comportements antisociaux et les symptômes dépressifs était non-significative dans les classes avec des normes neutres. En fait, cette association était même négative lorsque les normes étaient favorables (c.-à-d. une corrélation positive entre les comportements antisociaux et la préférence sociale), de sorte que les jeunes avec des comportements antisociaux au début de l'année présentaient moins de symptômes dépressifs à la fin de l'année. Ni le sexe ni le niveau scolaire ont modéré les associations susmentionnées.

En conclusion, les résultats de cette étude suggèrent que dans les salles de classe, les normes descriptives et les normes de statut jouent des rôles importants, bien que distincts, dans

l'exacerbation des symptômes dépressifs et des comportements antisociaux des jeunes, mais également qu'elles peuvent atténuer ces mêmes résultats dans des contextes favorables.

MOTS-CLÉS: comportements antisociaux, symptômes dépressifs, normes descriptives, normes de statut

SUMMARY

Antisocial behavior in childhood can interfere with normal psychosocial development and is a significant risk factor for internalized mental health disorders, such as depressive symptoms (Capaldi & Stoolmiller, 1999; Fontaine et al., 2019; Wolff & Ollendick, 2006). Previous studies have shown that classrooms are important contexts for youth's socio-emotional development (Veenstra et al., 2018). In classroom settings, social norms emerge from student behaviors, including modeling, reinforcement and punishment of classmates' behaviors (Bukowski et al., 2007). These norms may play a role not only in the development of youth's antisocial behaviors, but also in the association between these behaviors and depressive symptoms.

The main objective of this doctoral essay was to investigate the role of different types of classroom norms in the stability of youth's antisocial behaviour and in the longitudinal association between antisocial behaviour and depressive symptoms. A second objective of this essay was to examine whether these associations were moderated by grade or sex. The study sample was comprised of students in grades 4 through 6 who completed questionnaires in the fall and spring of the same school year. Descriptive norms were operationalized as the classroom- and sex-specific mean level of antisocial behavior, whereas status norms were operationalized as the classroom- and sex-specific correlation between antisocial behavior and social preference. The results of the study showed that the stability of antisocial behavior at the individual level was moderated by descriptive norms rather than status norms when both norms were included simultaneously in the statistical analyses. Specifically, highly antisocial youth were more likely to show increases in antisocial behavior at the end of the year in classrooms with strong descriptive norms (i.e., antisocial behaviors were frequent) than in classrooms with neutral or weak descriptive norms (i.e., the frequency of antisocial behaviors was average or infrequent, respectively). The results also showed that status norms, for their part, played a role in the association between initial antisocial behavior and subsequent depressive symptoms. Specifically, antisocial youth were more likely to experience increased depressive symptoms at the end of the year in classrooms with unfavorable status norms (i.e., when antisocial behavior was associated with low social status) than in classrooms with neutral or favorable norms (i.e., when antisocial behavior was associated with high social status). No moderating effects of sex or grade were observed.

In conclusion, the results of this study suggest that, in classroom settings, descriptive norms and status norms play important, albeit distinct, roles in exacerbating youth's depressive symptoms and antisocial behaviors, but also that norms can mitigate these same outcomes in favorable contexts.

KEYWORDS: Antisocial behavior, depressive symptoms, descriptive norms, status norms

INTRODUCTION

Antisocial behavior in childhood may interfere with normal development and constitutes an important risk factor for subsequent maladjustment, including later internalizing mental health problems such as depressive symptoms (Capaldi & Stoolmiller, 1999; Fontaine et al., 2019; Wolff & Ollendick, 2006). Prior work indicates that classrooms are salient contexts for youth's behavioral and emotional development (Veenstra et al., 2018). Within classroom settings, students create social norms by modeling, reinforcing, or punishing specific behaviors and this has an incidence on youth's socio-emotional adjustment (Bukowski et al., 2007; Veenstra & Lodder, 2022). Classroom norms may thus play a significant role in the evolution of youth's antisocial behaviors as well as in the link between antisocial behavior and depressive symptoms. This doctoral essay investigated the role of different classroom norms on the stability of youth's antisocial behavior and on the longitudinal association between antisocial behavior and depression. The essay is structured into three chapters. The first chapter constitutes the general introduction and includes a review of the relevant literature and the general objectives of the study. The second chapter takes the form of a scientific article, which was published in *Research on Child and Adolescent Psychopathology*. The third chapter is a general discussion of the study's findings, the clinical implications and leads for future research.

1.1 Stability and Change of Antisocial Behavior

The term antisocial behavior refers to behaviors that infringe upon the rights of others and that violate social rules (Loeber & Schmalting, 1985; Vuchinich et al., 1992). Antisocial behavior can include violent (e.g., fighting, kicking, pushing) as well as nonviolent (e.g., theft, cheating, vandalism) behaviors. In addition to being at risk for future maladjustment, youth exhibiting high rates of antisocial behavior in childhood and adolescence place a heavy toll on their entourage and their community (Timmermans et al., 2010). Indeed, these youth typically have fewer educational and employment opportunities (Odgers et al., 2008) and their antisocial behavior creates immense costs to society. Indeed, the cost to the Canadian government for each individual participating in antisocial behavior between the ages of 4 and 14 is estimated to be around half a million dollars (Craig et al., 2011). Other studies have even reported figures from 1.3 to 1.5 million dollars, indicating that the societal costs vary according to the severity and duration of the individuals'

antisocial behavior (Cohen, 1998; Cohen & Piquero, 2009). Moreover, estimates of victimization costs (e.g., property damage, pain and suffering, and loss of quality of life) range between \$89 million to \$110 million for a cohort of 503 boys between 7 and 17 years of age (Welsh et al., 2008). Given the high social and individual costs incurred by these individuals, antisocial behavior in childhood and adolescence remains a topic of major concern for researchers and practitioners.

Aggressive forms of antisocial behavior typically peak in toddlerhood and steadily decline over the course of childhood for most youngsters, with the exception of a small percentage of youth who maintain high levels of these behaviors (Carroll et al., 2023). In contrast, nonviolent antisocial behaviors are relatively uncommon in early childhood, but begin to increase in frequency around 10 to 11 years of age (Fortin, 2003; Tremblay, 2010). In adolescence, aggressive forms of antisocial behavior continue to descend for most teenagers, whereas nonviolent rule-breaking behaviors become increasingly more frequent, peaking in mid-adolescence (Carroll et al., 2023). Research indicates that the developmental trajectories for antisocial behaviors are similar for both boys and girls (Zahn-Waxler et al., 2008; Snyder et al., 2012). However, boys consistently exhibit higher mean levels of antisocial behavior compared to girls. Indeed, boys' mean levels of antisocial behavior are approximately .25 standard deviations above those of girls across different data sources (Moffitt et al., 2001; Rhee & Waldman, 2002).

While ample research has examined the stability of inter-individual differences in antisocial behavior, findings are not necessarily consistent across studies. In a classical review of 16 studies, Olweus (1979) reported that stability coefficients for boys' antisocial behavior from early childhood through adolescence are high over relatively short intervals (test-retest $r = .73$ over a 3-year interval) and decline only slightly as the length of the interval increases ($r = .69$ and $.60$ over 5 and 10 years, respectively). A more recent meta-analysis of 39 studies found similar stability coefficients for antisocial behavior in childhood and adolescence ($r = .75$ over a 3-year interval) (Murray et al., 2018). However, another review of 60 studies reported a much more modest stability coefficient for antisocial behavior from childhood into late adolescence ($r = .33$) (Derzon, 2001). A closer examination of individual studies highlights some variability of stability coefficients for antisocial behavior from one study to another. For example, over a one-year interval, stability coefficients for antisocial behavior range from .34 to .63 for boys and from .34

to .61 for girls between different studies (Klostermann et al., 2016; Schaeffer et al., 2003; van Lier & Koot, 2010). Over five-year intervals, coefficients range from .48 to .69 for boys and from .34 to .66 for girls ranging from 5 to 14 years of age (Bartels et al., 2004; Cillessen & Mayeux, 2004; Ladd & Troop-Gordon, 2003).

Different factors may account for the variability in the stability coefficients of antisocial behavior. Whereas prior work has suggested that the variability may be explained by an affiliation with deviant peers (Dishion et al., 1996; Snyder et al., 2012), some research points to the role of social norms in the stability of antisocial behavior. Indeed, the stability of children's aggressive behavior—one dimension of general antisocial behavior—changes according to the prevalence and social acceptability of these behaviors in the classroom setting (Boxer et al., 2005; Frey et al., 2017; Henry et al., 2000; Laninga-Wijnen et al., 2020). Thus, the variability in the stability coefficients reported above may also be attributed to the presence of social norms in classroom contexts.

1.2 Depressive Symptoms

The primary characteristic of depression in childhood involves a persistent depressed mood (i.e., sadness) or loss of interest in previously enjoyed activities. However, childhood depression may also present as irritability and can include cognitive symptoms, such as difficulty concentrating, as well as physical symptoms, including changes in appetite, fatigue or disrupted sleep patterns (Bennett et al., 2005; Stringaris et al., 2013; Zahn-Waxler et al., 2008). Whereas depressive disorders are rather infrequent in childhood, with prevalence rates estimated to be between 1% and 2%, subclinical depression symptoms are much more common, affecting from 9% to 12% of children (Reinfjell et al., 2016; Wichstrøm et al., 2012). Importantly, the presence of depressive symptoms in childhood is a risk factor for subsequent depression disorders (i.e., at the clinical level) (Keenan et al., 2008). In childhood, sex differences in the prevalence of depressive symptoms vary between studies. Some results suggest higher rates of depression among boys (Wichstrøm et al., 2012), whereas others indicate no sex differences (Reinfjell et al., 2016). Depressive symptoms become more severe and frequent as children reach preadolescence (i.e., 12 to 13 years of age) (Angold et al., 2002; Fernandez Castelao & Kröner-Herwig, 2013; Zahn-Waxler et al., 2008). Then, a clear sex difference emerges around 13 to 14 years with girls being

two to three times more likely to experience depression symptoms than boys (Angold et al., 2002; Fernandez Castela & Kröner-Herwig, 2013; Wade et al., 2002).

1.3 The Social Failure Model

The interplay between antisocial behaviors and interiorizing problems, such as depression symptoms, has sparked the interest of many researchers, as a number of studies have found important co-occurrence at both clinical and subclinical levels, with effect sizes ranging from .05 to .43 (Defoe et al., 2013; Fanti et al., 2019; Fontaine et al., 2019; Klostermann et al., 2016; Timmermans et al., 2010; van Lier & Koot, 2010; Weeks et al., 2016; Wiesner, 2003). Patterson and colleagues (1991) developed the dual failure model to explain this co-occurrence. The dual failure model proposes that peer rejection and academic failure constitute two pathways through which early antisocial behavior leads to later internalizing symptoms. The academic failure component of this model has garnered mixed empirical support (Boutin et al., 2020; Evans & Fite, 2018) and lies beyond the scope of this doctoral essay, which focuses on a detailed examination of the “social failure” pathway. Specifically, regarding the role social experiences, it is thought that early conduct problems lead to negative social interactions—such as social rejection—due to the disruptive and atypical nature of these behaviors. In turn, experiences of social rejection are believed to exacerbate psychosocial maladjustment, fostering not only the maintenance of antisocial behaviors over time but also the emergence of depressive symptoms (Bowker & Etkin, 2014; Gooren et al., 2011; van Lier & Koot, 2010).

Different theories have been proposed to explain why antisocial behaviors may increase following experiences of peer rejection. First, according to the deviancy-training hypothesis (Dishion et al., 1996), antisocial youth who have been rejected by their peer group are more susceptible to associate with similarly antisocial peers (Dishion & Tipsord, 2011; Snyder et al., 2012). These affiliations may then lead to modeling and positive reinforcement for antisocial acts, thus increasing the probability of future participation in antisocial behavior (Dishion et al., 1996; Dishion & Tipsord, 2011; Snyder et al., 2012). Second, social-information processing theory (Dodge, 1986) contends that rejected youth are excluded from important social experiences and, as a result, develop social skills deficits and hostile attribution biases regarding peers’ motives. Negative biases in social cognition then lead them to engage in negative maladaptive behaviors

(Dodge et al., 2003). The psychobiological model of social rejection and depression (Slavich et al., 2010), for its part, illustrates the processes by which social rejection may lead to the development of depression symptoms. Specifically, this model asserts that the perception of social rejection provokes negative self-referential cognitions (e.g., “Others don’t like me”) and emotions (e.g., shame) and activates areas in the brain involved in the processing of negative affect (e.g., anterior insula). Perceived social rejection also has biological consequences linked to the development of depression (e.g., activation of the hypothalamic-pituitary-adrenal axis) (Slavich et al., 2010).

A number of studies have tested the mediation role of social rejection as proposed by the social failure model. Some found support for the mediating role of peer rejection in the link between initial and later antisocial behaviors (e.g., vandalism, physical aggression, rule breaking) for boys and girls in elementary school (i.e., 6 to 10 years of age) (Ladd & Troop-Gordon, 2003; Sturaro et al., 2011; van Lier & Koot, 2010). However, the reported indirect effect sizes are small ($\beta = .03$ to $.05$). When investigating this relationship, Pedersen and colleagues (2007) found that the purported mediating variable (i.e., peer rejection) was not associated with the outcome (i.e., antisocial behavior) and, thus, did not test for a mediating effect as the necessary criteria were not met (Baron & Kenny, 1986). When internalizing problems are examined as the outcome, results are also inconsistent. For instance, peer rejection completely mediated the association between conduct problems in kindergarten and depressive symptoms a year and a half later for both boys and girls in one study ($\beta = .56$) (Gooren et al., 2011). In contrast, other work examining this mediated relationship reported considerably more modest effect sizes. One study found a small indirect link between externalizing behaviors (i.e., conduct problems and opposition) in kindergarten and internalizing symptoms (i.e., depression and anxiety symptoms) in Grade 4, via peer rejection ($\beta = .02$) (van Lier & Koot, 2010). Similarly small mediating effects ($\beta = .01$) were observed by other scholars (Ladd & Troop-Gordon, 2003; Pedersen et al., 2007). Still others found no significant mediation effect of peer rejection in the link between initial externalizing behaviors and subsequent externalizing and internalizing problems among children and young adolescents (Kiesner et al., 2002; Pedersen et al., 2007). Thus, although some support for the social failure model exists, the evidence is far from unequivocal.

The variability in these results may be explained by different factors. For instance, measures of externalizing behaviors range from a general measure of antisocial behavior (Gooren et al., 2011), to disturbing classroom behaviors (Kiesner et al., 2002), to delinquency (Pedersen et al., 2007), to conduct and opposition problems (van Lier & Koot, 2010). Moreover, raters of these different measures are inconsistent. In some studies, aggregated scores of multiple informants (e.g., parent and teacher reports; peer and teacher reports; self, peer and teacher reports) were used to obtain scores for externalizing and internalizing problems (Pedersen et al., 2007; Sturaro et al., 2011; van Lier & Koot, 2010; Kiesner et al., 2002), whereas others relied on teacher reports (Gooren et al., 2011; Ladd & Troop-Gordon, 2003) or self-reports (Kiesner et al., 2002; Pedersen et al., 2007). Apart from such methodological differences, however, another factor yet to be considered is the role of contextual factors, such as social norms. Indeed, in contrast to the claims of the social failure model, antisocial behavior may not invariably lead to social rejection. Rather, different contexts have diverse social norms dictating whether a given behavior is socially acceptable or not (Henry et al., 2000; Veenstra et al., 2018; Vitaro et al., 2015). In other words, social norms may act as a moderating variable not only in the temporal stability of antisocial behavior but also in its link with subsequent depressive symptoms.

1.4 Social Norms

Social norms—which may be broadly defined as behavioral patterns and attitudes characterizing members of a group—emerge from individual-level attitudes, beliefs and behaviors, and influence them in return (Rubin et al., 2008; Veenstra et al., 2018). By mid-childhood, peers begin to play a more central role in children’s development and acceptance by the peer group becomes an important developmental goal (LaFontana & Cillessen, 2010; Rubin et al., 2008). This shift is emphasized by the large amount of time children spend with the same classmates throughout the school day (Dishion & Tipsord, 2011). As a result, classrooms are considered salient social contexts for the transmission of social norms among children (Bukowski et al., 2007; Rubin et al., 2008). Social norms established by classmates may therefore be especially relevant for understanding the stability of antisocial behavior and its link with depressive symptoms in youth in late childhood and early adolescence.

Theorists have described different types of norms, including descriptive norms and status norms

(i.e., norm salience, popularity norms, social prestige norms) (Henry et al., 2000; Peets et al., 2015; Veenstra et al., 2018). In their focus theory of normative conduct, Cialdini and colleagues (1991) were among the first to employ the term “descriptive norm” to characterize the prevailing behavior within a social context (i.e., what most group members do, or the perception thereof). Descriptive norms are typically operationalized as the group-level mean of a given behavior (Veenstra et al., 2018). On the other hand, status norms are operationalized as the correlation between the behavior of interest and social status, thus weighing the impact of individuals’ behavior according to their social position (Henry et al., 2000; Laninga-Wijnen et al., 2017; Veenstra et al., 2018).

The operationalization of status norms—originally conceptualized as the association between a behavior and social acceptance and/or rejection—has evolved due to the influence of different research traditions. Whereas developmental and clinical researchers have traditionally operationalized social status in terms of liking, rejection or social preference scores (liking – rejection), sociological traditions have conceptualized social status as popularity scores (Vaillancourt & Hymel, 2006). As a result, the operationalization of status norms in the literature varies slightly from one study to another (Brendgen et al., 2015; Guimond et al., 2018; Henry et al., 2000; Laninga-Wijnen et al., 2017). Conceptualizing status norms with a measure of social preference—which captures the degree of association between a given behavior, on the one hand, and social acceptance versus rejection on a single unidimensional scale, on the other hand—may be particularly useful to examine the role of status norms in the framework of the social failure model. Prior work has shown that both descriptive and status norms for antisocial behavior vary considerably from one classroom to another (Guimond et al., 2018; Henry et al., 2000; Kellam et al., 1998; Mercer et al., 2009; Thomas et al., 2006) and explain interindividual differences in various behaviors (e.g., aggression, deviant behavior). Indeed, several studies have reported main effects of status norms on youth’s aggressive behavior (Henry et al., 2000; Velásquez et al., 2021). For instance, Henry and colleagues (2000) found that the positive correlation between aggression and rejection predicted decreased aggression scores at the end of the school year. Main effects of descriptive norms on children’s aggression have also been observed, such that high within-classroom rates of aggression are associated with increased individual-level aggression (Boxer et al., 2005; Frey et al., 2017; Mercer et al., 2009; Thomas et al., 2011).

1.5 Classroom Norms as a Moderator in the Stability of Antisocial Behavior and its Link With Depressive Symptoms

To recapitulate, the social failure model (Capaldi & Stoolmiller, 1999) contends that youth exhibiting high levels of antisocial behavior are subject to peer rejection, which leads to the maintenance of antisocial behavior and the development of depressive symptoms. However, evidence suggests that antisocial behavior is not invariably rejected, but rather is associated with peer rejection in some contexts (i.e., classrooms) and with peer acceptance in others (Brendgen et al., 2015; Vitaro et al., 2015). The degree of rejection (or acceptance) associated with antisocial behavior should thus serve as a moderator, not a mediator, in the stability of children's antisocial behavior and the link of this behavior with depression. Based on the theoretical postulate of the social failure model (Capaldi & Stoolmiller, 1999), it may be inferred that antisocial youth may exhibit more antisocial behavior in classrooms with unfavorable status norms (i.e., when antisocial behavior is associated with low social status) due to their classroom-specific rejection experiences. Peer rejection deprives youth of normative socialization experiences and predicts hostile information processing (Dodge et al., 1986) and affiliation with deviant peers, which, in turn, may lead to modeling and reinforcement of antisocial behavior (Dishion & Tipsord, 2011; Vitaro et al., 2007). In contrast, in classrooms with favorable status norms there is a positive association between antisocial behavior and high social status (Veenstra et al., 2018). Youth who enjoy high status are thus protected from experiences of peer rejection in these classroom settings, despite their negative behaviors. Quite the contrary, their classmates perceive them as powerful and socially influential (Lease, Musgrove & Axelrod, 2002) and tend to emulate their behavior in hopes of improving their own social position (Cohen & Prinstein, 2006; Juvonen & Ho, 2008; Rambaran et al., 2013). Under these circumstances, highly antisocial children should be motivated to at least maintain or perhaps even increase their behavior in order to solidify their high social status. In other words, highly antisocial youth should show either no change or a further increase in antisocial behavior in classrooms with high status norms.

Prior work has provided some, albeit *indirect* evidence of a potential moderating role of status norms in the stability of antisocial behavior. For instance, one study found that preadolescents with aggressive friends were more likely to exhibit increased aggression in classrooms with favorable

status norms compared to classrooms with unfavorable norms (Laninga-Wijnen et al., 2017). Similarly, another study found that adolescents whose friends valued risk-taking (e.g., damaging objects, skipping school) adopted more risk-taking attitudes in classrooms with favorable status norms than in other classrooms (Rambaran et al., 2013). The evidence remains equivocal, however, as a recent study observed no significant moderating effects of status norms on the short-term stability of physical, relational aggression or common aggression (i.e., a general measure of aggression excluding variance specific to physical or relational aggression and including only that which is common to both) (Correia et al., 2019). Nonetheless, controlling the overlap between the different aggression measures via the use of residuals may have precluded the detection of significant moderating effects of status norms.

Conversely, social learning theory (Bandura, 1977) provides a solid theoretical basis for the potential effects of descriptive norms on the stability of students' antisocial behavior. According to this theory, simple exposure to certain social behaviors leads to observation and imitation processes, which ultimately results in the acquisition of those behaviors. This process would be reflected in the main effects of descriptive norms previously mentioned. However, it is also possible that descriptive norms moderate the stability of antisocial behavior, as has been observed by at least one study. Boxer and colleagues (2005) reported that Grade 3 students with aggression scores higher than the classroom descriptive norm decreased in aggression, whereas those whose aggressive behavior was below the descriptive norm showed more aggression over the course of the school year. Indeed, in accordance with social learning theory (Bandura, 1977), youth engaging in antisocial behavior have more opportunities to observe and imitate antisocial behavior—and be positively reinforced for such behavior—in classrooms where such behaviors are frequent (i.e., strong descriptive norm). In contrast, in classrooms where antisocial behavior is infrequent (i.e., low descriptive norm), these youth may be more likely to be exposed to non-antisocial or pro-social behaviors—such as collaboration and generosity—and may thus be more likely to replicate these types of behaviors.

Nevertheless, the moderating role of status norms may be particularly relevant for children's social-behavioral development. Indeed, when both norms are included simultaneously in the analyses, status norms—rather than descriptive norms—seem to shape individual-level behaviors

(Dijkstra & Gest, 2015; Laninga-Wijnen et al., 2017). In other words, children may be more likely to be influenced by behaviors associated with social status (i.e., status norm) than by the most prevalent behaviors (i.e., descriptive norm). Importantly, the above-mentioned studies are limited to different forms of aggression and risk-taking attitudes and do not specifically examine antisocial behavior, which encompasses both violent (i.e., aggression) and nonviolent rule-breaking behaviors (e.g., cheating, stealing). Thus, the role of norms in the stability of youth's antisocial behavior in general remains to be studied.

The role of social norms—both descriptive and status norms—in the association between antisocial behavior and subsequent depressive symptoms has yet to be examined. Nevertheless, according to Slavich's psychobiological model of social rejection and depression (2010), social rejection results in negative cognitions and emotions, as well as biological consequences involved in the development of depressive symptoms. Furthermore, an extensive amount of research supports the link between social rejection and depression (Beeri & Lev-Weisel, 2011; Kirchner et al., 2022). It follows that, in classrooms where antisocial behavior is associated with social rejection at the beginning of the school year (i.e., low status norm), highly antisocial youth should increase in depressive symptoms at the end of the school year. On the other hand, highly antisocial youth in classrooms with high status norms would not be expected to report increased levels of depressive symptoms, as their high social standing protects them from experiences of peer rejection and thus acts as a buffer against the development of depression.

1.6 Sex and Grade Differences

Studies having examined sex differences in the stability of antisocial behavior and in its link with depressive symptoms in late childhood and early adolescence report conflicting results. Indeed, some studies indicate stronger stability coefficients of antisocial behavior among boys in early adolescence (Fanti et al., 2019; Klostermann et al., 2016), others among girls in childhood and adolescence (Cillessen & Mayeux, 2004) and yet others report no significant sex differences in the stability of antisocial behavior (Ladd, 2006; Ladd & Troop-Gordon, 2003; van Lier & Koot, 2010; Weeks et al., 2016). Similar inconsistencies are present in studies examining sex differences in the association between antisocial behavior and depressive symptoms in childhood and early adolescence. Indeed, some authors report finding no sex differences (Fontaine et al., 2019; van

Lier & Koot, 2010), while others have found that the strength of the association varies according to sex, with some reporting stronger effects for boys in early adolescence (Klostermann et al., 2016) and others reporting more important effects for girls in childhood and adolescence (Fanti et al., 2019; Weeks et al., 2016). Sex was thus included as a moderating variable in the present essay to address these inconsistencies in the literature and to examine if the moderating role of classroom norms on the association between initial antisocial behavior and subsequent depressive symptoms and the stability of antisocial behavior varies according to sex.

Moreover, prior work has also demonstrated that the main effect of status norms on aggression is limited to older children (i.e., 12 years versus 9 years) (Henry et al., 2000), which is in line with research indicating that a high social standing among peers is a more salient developmental goal for older youth compared to younger children (LaFontana & Cillessen, 2010). Thus, grade was included as a potential moderating variable in this essay to test the hypothesis that the moderating effect especially of status norms would only be significant in upper grades, as older students are more attuned to social status processes and, thus, may be more likely to adjust their behaviors to improve their social standing than younger students.

1.7 General Objectives of the Doctoral Essay

The general objective of this doctoral essay was to address the limitations of the social failure model (Capaldi & Stoolmiller, 1999) in regard to the stability of antisocial behavior and its association with depressive symptoms. To this effect, we examined the potential moderating effect of status norms on the association between youth's individual levels of antisocial behavior in the fall of the school year and depressive symptoms and antisocial behavior in the spring of the same year, while controlling for initial levels of these behaviors. The potential main and moderating effects of descriptive norms were also assessed within the same statistical models to test the hypothesis that status norms play a more central role in determining youth's social experiences than descriptive norms. Potential moderating effects of sex and grade regarding these associations were also tested. These associations were examined in a sample of youth attending grades 4 through 6. Late childhood and early adolescence are periods of particular interest when examining classroom norms, as youth of this age are highly attuned to social acceptance and rejection

processes (LaFontana & Cillessen, 2010) and spend the majority of their school day in the same classroom setting (Dishion & Tipsord, 2011).

CHAPTER II

THE SOCIAL FAILURE MODEL: DO CLASSROOM NORMS PLAY A ROLE IN THE DEVELOPMENT OF ANTISOCIAL BEHAVIOR AND DEPRESSIVE SYMPTOMS?

ARTICLE PUBLISHED IN RESEARCH ON CHILD AND ADOLESCENT
PSYCHOPATHOLOGY, 2024, pp. 1737-1751

Amy Burningham¹, Mara Brendgen¹, Lyse Turgeon², and Frank Vitaro²

¹ Department of Psychology, University of Quebec at Montreal, Montreal, Quebec, Canada; ² Department of Psycho-Education, University of Montreal, Quebec, Canada.

Corresponding Author: Mara Brendgen, Department of Psychology, University of Quebec at Montreal, C.P. 8888 succursale Centre-ville, Montreal, Quebec, Canada, H3C 3P8, email: Brendgen.Mara@uqam.ca, phone: (514) 987-3000, fax: (514) 987-7953.

Résumé

Cette étude a examiné le rôle modérateur des normes descriptives et des normes de statut dans la stabilité des comportements antisociaux des jeunes, ainsi que le lien entre le comportement antisocial et le développement de symptômes dépressifs pendant une année scolaire, tout en contrôlant le niveau de base de dépression. Un total de 1081 élèves (51.06% filles, niveaux 4 à 6), issus de quartiers à statut socio-économique faible à moyen, ont rempli des questionnaires auto-évalués et un inventaire de nomination par les pairs à l'automne et au printemps de la même année scolaire. Les normes descriptives ont été opérationnalisées comme le niveau moyen de comportement antisocial spécifique à la classe et au sexe. Les normes de statut ont été définies comme la corrélation entre le comportement antisocial et la préférence sociale spécifique à la classe et au sexe. Les résultats démontrent que les normes descriptives et les normes de statut modèrent l'association entre les comportements antisociaux au T1 et au T2. Ainsi, les jeunes manifestant des comportements antisociaux élevés ont montré une augmentation plus importante de ces comportements dans des classes où les normes descriptives favorisaient de tels comportements (c.-à-d. + 1 ET) comparativement aux classes avec des normes neutres ou faibles (c.-à-d. - 1 ET). Les normes de statut ont modéré l'association entre les comportements antisociaux au T1 et les symptômes dépressifs at T2. Les jeunes présentant des niveaux plus élevés de comportements antisociaux avaient davantage de symptômes dépressifs dans les classes où les normes de statut étaient défavorables comparativement aux classes avec des normes neutres ou favorables. Aucun effet modérateur du sexe ou du niveau scolaire n'a été observé. Ces résultats suggèrent que les deux types de normes jouent des rôles importants, mais distincts. Elles peuvent exacerber les symptômes de dépression et les comportements antisociaux chez les jeunes, mais elles peuvent également contribuer à atténuer ces mêmes facteurs dans des contextes favorables.

MOTS-CLÉS: comportements antisociaux, symptômes dépressifs, normes descriptives, normes de statut

Abstract

This study examined the moderating role of descriptive and status norms in the stability of youth's antisocial behavior, and the link between initial antisocial behavior and the development of depressive symptoms over the course of one academic year, while controlling for initial depression levels. A total of 1081 students (51.06% girls; grades 4 through 6) in schools in low to average socio-economic status neighborhoods completed self-reports and a peer nomination inventory in the fall (T1) and spring (T2) of one year. Descriptive norms were operationalized as the classroom- and sex-specific mean level of antisocial behavior. Status norms were operationalized as the classroom- and sex-specific correlation between antisocial behavior and social preference. Descriptive norms moderated the link between T1 and T2 antisocial behavior, such that youth exhibiting high levels of antisocial behavior showed a greater increase in antisocial behavior in classrooms where descriptive norms strongly favored such behavior (i.e., + 1 SD) than in classrooms with neutral or weak descriptive norms (i.e., - 1 SD). Status norms moderated the association between T1 antisocial behavior and T2 depressive symptoms, such that youth with high levels of antisocial behavior had higher depressive symptoms in classrooms where status norms disfavored antisocial behavior than in classrooms with neutral or favorable norms. No moderating effects of sex or grade were observed. These results suggest that both descriptive norms and status norms play important, albeit distinct, roles in exacerbating youth's depressive symptoms and antisocial behavior, but they may also mitigate these same outcomes in favorable contexts.

Key words: Antisocial behavior, depressive symptoms, classroom norms

Introduction

Antisocial behavior in childhood, which includes violent (e.g., aggression) and nonviolent acts (e.g., theft) that infringe upon the rights of others, is an important risk factor for future psychosocial maladjustment, including depressive symptoms (Capaldi & Stoolmiller, 1999). Although uncommon in early childhood, antisocial behavior increases in frequency around 10 to 11 years of age and peaks in mid-adolescence for both sexes (Tremblay, 2010). Despite following similar trajectories, boys exhibit higher mean levels of antisocial behavior than girls (Rhee & Waldman, 2002). While antisocial behavior seems to be relatively persistent over time, stability estimates nevertheless vary significantly across studies. For instance, test-retest correlations of antisocial behavior over a one-year interval have been found to range from .34 to .64 for boys and .34 to .61 for girls (Klostermann et al., 2016; van Lier & Koot, 2010). Sex differences in the stability of antisocial behavior are also variable, with some studies reporting stronger stability coefficients among boys (Fanti et al., 2019; Klostermann et al., 2016), others among girls (Cillessen & Mayeux, 2004), whereas still others found no sex differences (Ladd, 2006; Ladd & Troop-Gordon, 2003; van Lier & Koot, 2010; Weeks et al., 2016). Although such variations in test-retest correlations may in part be explained by factors such as age or individual differences in affiliation with deviant peers (Dishion & Tipsord, 2011; Snyder et al., 2012), some research points to the role of social norms in the stability of antisocial behavior. Indeed, prior work has demonstrated that the stability of aggression—a dimension of antisocial behavior—is moderated by classroom norms (Frey et al., 2017; Laninga-Wijnen et al., 2017). However, it is unknown whether classroom norms also play a moderating role in the association between antisocial behavior and depressive symptomology. As depressive symptoms in childhood are a risk factor for future mental illness (Reinfjell et al., 2016), understanding the role of classroom norms in the development of depressive symptoms among youth with high levels of antisocial behavior may contribute to the development of preventive intervention programs.

The Social Failure Model

Ample research has documented the co-occurrence between antisocial behavior and depressive symptoms (Fanti et al., 2019; Klostermann et al., 2016). This association is observed in both sexes, although it has sometimes been found to be stronger in boys (Klostermann et al.,

2016) or in girls (Fanti et al., 2019, Weeks et al., 2016), while other researchers reported no sex differences (Fontaine et al., 2019). To explain the positive correlation between these two seemingly opposing difficulties, Capaldi and Stoolmiller (1999) developed the social failure model, postulating that early antisocial behavior may lead to adverse social experiences (e.g., peer rejection) due to the disruptive nature of antisocial behavior. In turn, rejection may not only foster the maintenance of antisocial behavior but also the development of depressive symptoms (Bowker & Etkin, 2014; Gooren et al., 2011). This mediation model has been tested in several studies with varying results. Some studies found that peer rejection was a significant mediator in the stability of antisocial behavior (e.g., physical aggression, rule breaking) for both sexes between 6 and 10 years of age (Ladd & Troop-Gordon, 2003; Sturaro et al., 2011; van Lier & Koot, 2010). However, at least one study reported that rejection was not correlated with later antisocial behavior and thus did not test the mediation model, as mediation criteria were not met (Pedersen et al., 2007). There are similar disparities between studies examining depressive symptoms as the outcome: whereas one study found a complete mediation of rejection in the association between antisocial behavior and depressive symptoms for both sexes at 5 – 6 years of age (Gooren et al., 2011), other reported small (Ladd & Troop-Gordon, 2003; van Lier & Koot, 2010) or insignificant mediating effects (Kiesner, 2002; Pedersen et al., 2007).

Methodological differences may partly explain these divergent results. For instance, the operationalization of antisocial behavior varies between studies, ranging from a general measure of antisocial behavior (Gooren et al., 2011), to disturbing classroom behaviors (Kiesner et al., 2002), delinquency (Pedersen et al., 2007) or conduct problems (van Lier & Koot, 2010). However, contextual factors, such as social norms, may also be at play. Indeed, contrary to the postulate of the social failure model (Capaldi & Stoolmiller, 1999), antisocial behavior may not invariably lead to rejection. Rather, the rejection of such behavior depends upon contextual factors like social norms (Henry et al., 2000; Vitaro et al., 2015). Social norms may thus act as a moderating variable of the stability of antisocial behavior, as well as its link with depressive symptoms.

Social Norms

Social norms may be broadly defined as behavioral patterns and attitudes characterizing group members, which emerge from individual-level attitudes, beliefs and behaviors (Veenstra et al., 2018). Norms within classrooms are of particular interest when examining youth's psychosocial development, as acceptance by peers becomes an important developmental goal by mid-childhood (LaFontana & Cillessen, 2010). Thus, classroom norms may be especially relevant for understanding the stability of antisocial behavior and its link with depressive symptoms in middle-to-late childhood.

Several types of norms are identified in the literature, including descriptive norms and status norms (which are sometimes also referred to as norm salience, popularity norms or social prestige norms). Descriptive norms reflect average levels of a behavior, or the perception thereof, whereas status norms reflect the link between behavior and social standing (or status) among peers (Veenstra et al., 2018). The operationalization of status norms—originally conceptualized as the association between a behavior and acceptance (or rejection)—has evolved due to the influence of different research traditions (Henry et al., 2000). Whereas developmental researchers tend to conceptualize social status in terms of acceptance, rejection or social preference (i.e., acceptance minus rejection scores), sociological traditions typically conceptualize it in terms of popularity (Vaillancourt & Hymel, 2006). Prior work has found that both descriptive and status norms for antisocial behavior vary significantly between classes and that both play a role in explaining inter-individual differences in various behaviors (e.g., aggression, deviant behavior) (Busching & Krahe, 2018; Correia et al., 2022). Indeed, several studies have reported main effects of status norms on youth's aggressive behavior (Henry et al., 2000; Velásquez et al., 2021). For instance, Henry and colleagues (2000) found that the positive correlation between aggression and rejection predicted decreased aggression scores at the end of the school year. Main effects of descriptive norms on children's aggression have also been observed, such that high within-classroom rates of aggression are associated with increased individual-level aggression (Boxer et al., 2005; Frey et al., 2017; Mercer et al., 2009; Thomas et al., 2011).

Classroom Norms as a Moderator in the Stability of Antisocial Behavior

Based on the theoretical postulate of the social failure model (Capaldi & Stoolmiller, 1999), it may be inferred that youth high in antisocial behavior at the beginning of the school year may

show increased antisocial behavior in classrooms with unfavorable status norms (i.e., when aggression is associated with low social status) due to their classroom-specific rejection experiences. Peer rejection deprives youth of normative socialization experiences and predicts hostile information processing (Dodge et al., 1990) and affiliation with deviant peers, which, in turn, may lead to modeling and reinforcement of antisocial behavior (Dishion & Tipsord, 2011; Vitaro et al., 2007). In contrast, in classrooms with favorable status norms (i.e., when aggression is associated with high social status), antisocial youngsters are perceived as socially influential and powerful (Lease et al., 2002) and are thus protected from peer rejection (Cohen & Prinstein, 2006; Juvonen & Ho, 2008; Rambaran et al., 2013). In such contexts, youth may be motivated to maintain—and perhaps even further increase—the frequency of their antisocial behavior to solidify their social standing. In other words, youth with high levels of antisocial behavior in classrooms with favorable status norms should show either no change or a further increase in antisocial behavior over the course of the school year.

Prior work has provided some, albeit *indirect* evidence of a potential moderating role of status norms in the stability of antisocial behavior. For instance, one study found that youth with aggressive friends were more likely to exhibit increased aggression in classrooms with favorable status norms compared to classrooms with unfavorable norms (Laninga-Wijnen et al., 2017). Similarly, another study found that adolescents whose friends valued risk-taking (e.g., damaging objects, skipping school) adopted more risk-taking attitudes in classrooms with favorable status norms than in other classrooms (Rambaran et al., 2013). The evidence remains equivocal, however, as a recent study observed no significant moderating effects of status norms on the short-term stability of physical, relational aggression or common aggression (i.e., a general measure of aggression excluding variance specific to physical or relational aggression and including only that which is common to both) (Correia et al., 2022). Nonetheless, controlling the overlap between the different aggression measures via the use of residuals may have precluded the detection of significant moderating effects of status norms.

Conversely, social learning theory (Bandura, 1973) provides a solid theoretical basis for the potential effects of descriptive norms on the stability of students' antisocial behavior. According to this theory, simple exposure to certain social behaviors leads to observation and

imitation processes, which ultimately results in the acquisition of those behaviors. This process would be reflected in the main effects of descriptive norms previously mentioned. However, it is also possible that descriptive norms moderate the stability of antisocial behavior, as has been observed by at least one study. Boxer and colleagues (2005) reported that Grade 3 students with aggression scores higher than the classroom descriptive norm decreased in aggression, whereas those whose aggressive behavior was below the descriptive norm showed more aggression over the course of the school year. Indeed, in accordance with social learning theory (Bandura, 1973), youth engaging in antisocial behavior have more opportunities to observe and imitate antisocial behavior—and be positively reinforced for such behavior—in classrooms where such behaviors are frequent (i.e., strong descriptive norm). In contrast, in classrooms where antisocial behavior is infrequent (i.e., low descriptive norm), these youth may be more likely to be exposed to non-antisocial or pro-social behaviors—such as collaboration and generosity—and may thus be more likely to replicate these types of behaviors.

Nevertheless, the moderating role of status norms may be particularly relevant for children’s social-behavioral development. Indeed, when both norms are included simultaneously in the analyses, status norms—rather than descriptive norms—seem to shape individual-level behaviors (Dijkstra & Gest, 2015; Laninga-Wijnen et al., 2017). In other words, children may be more likely to be influenced by behaviors associated with social status (i.e., status norm) than by the most prevalent behaviors (i.e., descriptive norm). Importantly, the above-mentioned studies are limited to different forms of aggression and risk-taking attitudes and do not specifically examine antisocial behavior, which encompasses both violent (i.e., aggression) and nonviolent rule-breaking behaviors (e.g., cheating, stealing). Thus, the role of norms in the stability of youth’s antisocial behavior in general remains to be studied.

Classroom Norms as a Moderator in the Link Between Antisocial Behavior and Depressive Symptoms

Perhaps even more importantly, no study has yet examined the potential moderating role of norms in the association between antisocial behavior and depressive symptoms. Nevertheless, extensive research has documented that peer rejection is associated with a heightened risk for depressive symptoms (Brendgen et al., 2005; Kiesner et al., 2002). For instance, Kiesner (2002)

found that young adolescents' social preference scores (acceptance – rejection scores) predicted depressive symptoms the following year, while controlling for initial depression levels. According to the psychobiological model of social rejection and depression (Slavich et al., 2010), biological processes underlie the link between rejection and depressive symptoms such that rejection activates cerebral regions involved in the processing of negative affect (e.g., shame) and self-referential cognitions (e.g., “I have no self-worth”). The activation of these regions stimulates the hypothalamic-pituitary-adrenal and sympathetic-adrenal-medullary axes, ultimately resulting in increased cortisol production and sustained inflammation, thus rendering the individual vulnerable for depression. It follows that youth exhibiting antisocial behavior should experience more depressive symptoms in classrooms with unfavorable status norms due to their classroom-specific rejection experiences. In contrast, when status norms are favorable, antisocial youth are unlikely to report more depressive symptoms, as their high social standing ought to protect them from peer rejection, thus acting as a buffer against the development of depressive symptoms. To the best of our knowledge, no study has investigated the potential moderating role of descriptive norms in the development of depressive symptoms among youth high in antisocial behavior. Moreover, no theoretical framework currently exists to support the notion that the frequency of antisocial behavior at the group level might act on the development of depressive symptoms among these youth. Therefore, it seems unlikely that descriptive norms moderate the association between antisocial behavior and depressive symptoms.

The Present Study

The general objective of this study was to explore the role of classroom norms in the stability of antisocial behavior and the development of depressive symptoms in elementary students over the course of one academic year. To this end, we examined the potential moderating effects of status norms and descriptive norms on the association between antisocial behavior in the fall and depressive symptoms and antisocial behavior in the spring, while controlling for the initial levels of these behaviors. Regarding the specific role of status norms, we hypothesized that youth with higher levels of antisocial behavior in the fall would show either no change in antisocial behavior from fall to spring or report a slight increase in antisocial behavior to maintain their elevated social position in classrooms with favorable status norms. However, their depressive symptoms should remain unchanged or even decrease in those same classrooms. In classrooms

with unfavorable status norms, we expected that—in line with the social failure model—youth high in antisocial behavior would increase in antisocial behavior in the spring due to their classroom-specific rejection status. In the same context, highly antisocial students should also manifest more depressive symptoms. Operationalizing status norms with a measure of social preference may be particularly appropriate in the framework of the social failure model (Capaldi & Stoolmiller, 1999), as the measure captures the degree of the association between the behavior, on the one hand, and social acceptance versus rejection on a unidimensional scale, on the other hand. Moreover, employing sex-specific classroom norms may be important to understand the role of classroom norms especially in the link between youth’s antisocial behavior and depression outcomes, as antisocial behavior is more frequent and typically more socially acceptable among boys (Cillessen & Malleux, 2004), whereas—starting at the end of middle childhood—depression levels are generally higher in girls (Salk et al., 2017). A single norms index would fail to capture this nuance.

Regarding the effects of descriptive norms, we first hypothesized that classroom descriptive norms may have a main effect on students’ antisocial behavior, such that strong within-classroom descriptive norms in the fall would predict more frequent antisocial behavior in the spring of the same year due to social learning processes such as observation and imitation. We also hypothesized that descriptive norms might play a moderating role in the stability of elementary students’ antisocial behavior over the course of the school year. Specifically, youth who already display high levels of antisocial behavior in the fall should show even higher levels of antisocial behavior in the spring in classrooms with strong descriptive norms, as they might be especially susceptible to social learning—including vicarious reinforcement—of such behavior. We did not expect descriptive norms to play a role in the development of depressive symptoms among youth high in antisocial behavior, however. Finally, we expected the effects of status norms to be stronger than the effects of descriptive norms in the stability of antisocial behavior.

Another goal of this study was to examine potential moderating effects of children’s sex. As mentioned previously, studies that examined sex differences in the stability of antisocial behavior or its association with depressive symptoms have reported conflicting results. Given these inconsistencies, no specific hypotheses concerning potential moderating effects of sex were proposed in this study. Rather, sex was included as a putative moderating variable in an exploratory

manner to examine whether the moderating effect of status norms on the stability of antisocial behavior and its link with depressive symptoms differs according to sex. A last objective was to examine whether the potential moderating effects of norms vary by grade level. Indeed, prior work has shown that the main effect of status norms on aggression is limited to older children (i.e., 12 years versus 9 years) (Henry et al., 2000), which is in line with research indicating that a high social standing among peers is a more salient developmental goal for older youth compared to younger children (LaFontana & Cillessen, 2010). Thus, grade was included as a potential moderating variable to test the hypothesis that the moderating effect especially of status norms would only be significant in upper grades, as older students are more attuned to social status processes and, thus, may be more likely to adjust their behaviors to improve their social standing than younger students.

Method

Participants

The study sample was comprised of 1802 fourth through sixth graders (890 boys, 8 to 13 years, $M = 10.26$, $SD = 1.03$) in 69 classrooms situated within 23 elementary schools. Students were placed in new classrooms at the beginning of the school year. After consent was obtained from the school board ethics committee, the school board furnished the research team with a list of schools that could be contacted to participate in the present study. These schools were contacted directly by the research team to verify the school administrations' interest and to obtain their consent to participate. Following that, teachers could choose whether they would set aside time for their students to participate in the study or not. No incentives were offered to schools, teachers or students for their participation. According to school board records from the time of data collection, participating schools were situated in low to average socio-economic status neighborhoods in a large Canadian city. According to school board records at the time of testing, 54% of the student population from which the sample was obtained, both parents were born in Canada, while 27% reported having at least one immigrant parent and 19% of students were born in another country. Students of immigrant descent originated from the Caribbean (18.0%), North Africa (4.7%), Central America (4.4%), South America (3.3%), Middle East (2.9%), Southern Europe (2.8%) and

Southeast Asia (2.2%). One third (33%) of students' mother tongue was neither English nor French, and 24% spoke neither French nor English at home.

Data collections took place in the fall (T1) and spring (T2) of the same school year. Written consent forms were sent to parents via the students who had to bring the signed document back to their teacher in order to participate in the study. In addition to their parents' active written consent, students had to provide their active verbal assent to the research assistants to be eligible for participation. Students who did not obtain parental consent (or provide verbal assent) could remain in the classroom and do alternative activities while their classmates filled out the questionnaires. As suggested by Cillessen and Marks (2011), only classrooms in which active informed consent by parents and verbal assent by participants was obtained for at least 75% of students at both data collections were included in the study to ensure the validity of the peer nomination data. Moreover, for the purposes of this study, only classrooms with at least 50% of students having completed at least 50% of the items for antisocial behavior were considered for participation. A total of 6 classes (N = 166 individual students) did not meet these criteria and were subsequently excluded from all analyses. Additionally, among the classrooms satisfying these validity criteria, 555 students had no antisocial behavior data and, for this reason, were excluded from this study. Thus, a subsample of 1081 students (529 boys; 8 to 13 years, $M = 10.33$, $SD = 1.00$) in 63 classrooms and 23 schools was retained from the original study sample. Classrooms excluded due to lacking valid antisocial behavior data at both data collections were in lower grades ($t = 8.86$, $p < .001$) compared to the retained sample. From the latter, a total of 3.4 % of data points were missing, mostly due to missing data for antisocial behavior: 14.5% and 7.6% of data for antisocial behavior were missing at T1 and T2, respectively. Results from Little's missing completely at random (MCAR) test indicated that data in this subsample were likely not missing completely at random ($\chi^2(38) = 138.42$, $p < .000$). Analyses with logistic regressions on missing and non-missing values for antisocial behavior with sex, age, grade, social preference and depression included as predictors identified grade as a significant predictor of missingness of T1 antisocial behavior ($b = -1.32$ (.20), $p < .001$). More specifically, children in grades 4 and 5 were much more likely to have missing antisocial behavior scores at T1 than those in grade 6 (Grade 4: $b = 4.24$, $p < .001$, $OR = 69.14$ (95% CI: 15.05, 317.66); Grade 5: $b = 31.28$, $p < .001$, $OR = 31.28$ (95% CI: 7.35, 133.15). There were no significant predictors of missingness of antisocial behavior at T2. Because missingness for

antisocial behavior is due to a predictable reason, (i.e., grade), missing values may be considered missing at random (MAR) and this predictor was included as an auxiliary variable in the main analyses to adjust estimated model parameters to accurately reflect the original population values (Little et al., 2014). Missing data were imputed with multiple imputations of 100 data sets using IBM SPSS Statistics (Version 27) software.

Furthermore, sensitivity analyses were run on a subset, which excluded 24 classrooms that failed to meet validity criteria for antisocial behavior at only one of the two data collections (18 classrooms at T1 and 6 classrooms at T2), in addition to the 6 classes previously excluded, to test the robustness of the results. Within the remaining 39 classrooms satisfying validity criteria at both T1 and T2, 309 students had no antisocial behavior data and were also excluded from sensitivity analyses (N = 702; 48.4% boys; $M = 10.62$, $SD = .04$ years; 39 classes; 22 schools). As with the previous subset, t -test analyses showed that classrooms excluded due to lack of valid antisocial behavior data at T1 and T2 for the purposes of sensitivity analyses tended to be in lower grades ($t = 25.58$, $p < .001$) than the retained sample.

Procedure

Data were collected during school hours during two separate periods of 50 minutes at each data collection (a total of 200 minutes). Research assistants read instructions to the participants and remained in the classrooms with the teacher to provide clarification if necessary. Participants filled out the questionnaires on paper forms with pencils and they were reminded not to discuss their responses with other students.

Measures

Antisocial Behavior. Students completed 8 items measuring general antisocial behavior drawn from the *Self-Reported Delinquency Questionnaire* (LeBlanc, 1994) to assess the frequency of antisocial behavior over the course of the current school year. Students had to specify the frequency of their behavior according to a four-point rating scale: *never*, *one or two times*, *several times*, or *very often*). Examples of items measuring antisocial behavior are “Over the course of this school year, did you intentionally break another person’s belongings” and “Over the course of this school year, did you cheat during an exam”. The mean score of these eight items was used to construct a

measure of general antisocial behavior at T1 and T2. Cronbach's alphas for antisocial behavior at T1 and T2 were .80 and .81, respectively (T1 antisocial behavior: $M = 1.15$, $SD = .31$, $Min = 1.00$, $Max = 4.00$, $Skew = 4.03$, $Kurtosis = 21.27$; T2 antisocial behavior: $M = 1.19$, $SD = .36$, $Min = 1.00$, $Max = 4.00$, $Skew = 3.59$, $Kurtosis = 17.11$). Due to elevated skewness and kurtosis, univariate outliers were winsorized when necessary so that values above the 99 percentile were brought within that interval and square root transformations were performed (T1 antisocial behavior following winsorization and transformations: $M = .23$, $SD = .30$, $Min = .00$, $Max = 1.27$, $Skew = 1.25$, $Kurtosis = 1.19$; T2 antisocial behavior following winsorization and transformations: $M = .27$, $SD = .32$, $Min = .00$, $Max = 1.27$, $Skew = 1.06$, $Kurtosis = .57$.)

Depressive Symptoms. Depressive symptoms were measured at T1 and T2 via the *Peer Evaluation Inventory* (Pekarik et al., 1976). Each student was given a list with their classmates' names and asked to nominate up to four classmates who best corresponded to the behavioral description: "Those who are unhappy or sad". Depressive symptoms scores were calculated by summing the number of nominations for the item and then z -standardizing that score within the classroom (T1: $M = 0.00$, $SD = 0.97$, $Min = -1.41$, $Max = 4.31$, $Skew = 1.77$, $Kurtosis = 3.14$; T2: $M = 0.00$, $SD = 0.97$, $Min = -1.30$, $Max = 4.16$, $Skew = 1.79$, $Kurtosis = 2.85$).

Social Preference. Individual-level social preference scores were used to operationalize status norms. Students nominated up to four classmates (regardless of sex) with whom they like to play the least (rejection nominations) and up to four classmates with whom they like to play the most (acceptance nominations) (Coie et al., 1982). The number of acceptance nominations was summed for each individual to create a Liked-Most score, which was then z -standardized within the classroom to account for differences in class sizes. Similarly, the number of rejection nominations was totaled for each student and z -standardized within the classroom, generating a Liked-Least score. Following the procedure outlined by Coie and colleagues (1982), social preference scores were calculated by subtracting students' Liked-Least scores from their Liked-Most scores, which was also z -standardized within the classroom. High social preference scores indicate greater peer acceptance and low scores indicate greater peer rejection. Pearson correlations between acceptance and rejection nominations at T1 and T2 were $r = -.327$, $p < .001$ and $r = -.308$, $p < .001$, respectively.

Descriptive Norms. Descriptive norms were defined as the prevalence of antisocial behavior within classrooms and operationalized as the within-classroom sex-specific mean score of students' T1 antisocial behavior (Veenstra et al., 2018). Descriptive norms ranged from .00 to .58 for boys ($M = 0.30$, $SD = 0.13$) and from 0.00 to 0.49 for girls ($M = 0.16$, $SD = 0.09$).

Status Norms. Following the procedure used in prior studies (Guimond et al., 2018), status norms were calculated as the sex-specific within-classroom correlation between students' T1 antisocial behavior scores and their T1 social preference scores. Thus, favorable status norms were represented by a positive correlation between T1 antisocial behavior scores and T1 social preferences scores, whereas unfavorable status norms were represented by a negative correlation. Within-classroom correlations between antisocial behavior and social preference scores ranged from -0.98 to 0.55 for boys ($M = -0.19$, $SD = 0.39$) and from -0.95 to 1.00 for girls ($M = -0.13$, $SD = 0.45$). Pearson's correlation between descriptive norms and status norms was small but significant ($r = -0.065$, $p = 0.035$).

Analyses

Multilevel linear regressions using Linear Mixed Models were performed with the Statistical Package for the IBM SPSS Statistics (Version 27) software. Multilevel models were used due to the nesting of students within classrooms, as the assumption of independence in group variance estimates is violated in such contexts. Moreover, our study design suggested a three-level structure of the data: children (level 1) nested within classrooms (level 2) and classrooms nested within schools (level 3). Moreover, maximum likelihood estimation with robust estimation methods were used to generate unbiased standard error estimates and significance values (Maas & Hox, 2005) and to permit model comparison with log-likelihood values (Field, 2018).

To examine the role of classroom norms in the stability of antisocial behavior over the course of the school year as well as its association with depressive symptoms at the end of the school year, separate sets of analyses were performed with antisocial behavior at T2 and depressive symptoms at T2, controlling for their respective levels at T1. Thus, four sets of analyses were computed: one set predicting T2 antisocial behavior, another set predicting T2 depression and two

additional sets of sensitivity analyses (described below) with the same outcomes. Following unconditional models (required to validate the need for multilevel modeling), models were estimated for two levels: the student (level 1) nested within the classroom (level 2). The school level (level 3) was dropped from analyses because the results showed that it did not explain a significant amount of variance. The first model for all analyses included main effects of level 1 variables (i.e., sex, grade, T1 antisocial behavior, depressive symptoms). In model 2, main effects of level 2 variables (i.e., descriptive norms and status norms) were added. In model 3, two-way interactions between T1 antisocial behavior and classroom norms (i.e., “T1 antisocial behavior * status norms” and “T1 antisocial behavior * descriptive norms”) were introduced. Then, in model 4, two-way interactions with sex and grade (T1 antisocial behavior * sex, descriptive norms * sex, status norms * sex as well as T1 antisocial behavior * grade, descriptive norms * grade, status norms * grade) were tested in separate series of analyses (model 4 A and model 4 B). Finally, in model 5, three-way interactions with sex and grade were included (T1 antisocial behavior * descriptive norms * sex, T1 antisocial behavior * status norms * sex, T1 antisocial behavior * descriptive norms * grade, T1 antisocial behavior * status norms * grade), again in separate series of analyses (model 5 A and model 5 B). Significant interactions were decomposed using simple slopes at high (+1 SD) and low (-1 SD) levels of the moderators. The main and moderating effects of status norms and descriptive norms were included in the same statistical models to test the hypothesis that, when these norms are examined simultaneously, status norms rather than descriptive norms should play a role in these youth’s socio-emotional experiences. All variables, except sex and grade, were z-standardized across the whole sample prior to analyses to facilitate interpretation of the results. Effect sizes were interpreted using guidelines as established by Cohen (1988).

Results

Preliminary Analyses

Bivariate correlations between level one variables are presented in Table 1. Among boys and girls, T1 antisocial behavior was positively and moderately correlated with T2 antisocial behavior. There was also a high positive correlation between depressive symptoms at T1 and T2 for both sexes. Moreover, among girls only, there was a small positive correlation between

antisocial behavior and depressive symptoms at T1 and T2. There were, however, no significant sex differences regarding these correlations. Grade level was not significantly correlated with antisocial behavior or depressive symptoms.

Main Analyses

Results of the multilevel linear regressions predicting T2 antisocial behavior are presented in Table 2. The unconditional model showed that individual differences accounted for 98.84% ($p < .000$) of the variation in students' T2 antisocial behavior, whereas only 1.08% of the variation in students' T2 antisocial behavior was due to differences between classrooms. In model 1, sex (being a girl) was associated with lower levels of T2 antisocial behavior ($b = -.28$, $SE = .06$, $p < .001$) (i.e., a small effect size). Additionally, T1 antisocial behavior was significantly and positively associated with T2 antisocial behavior, indicating moderate stability of antisocial behavior over the course of one school year ($b = .46$, $SE = .03$, $p < .000$), that is, a medium effect size. No other main effects emerged as significant. In model 2, group-level variables were introduced to examine potential main effects of descriptive and status norms, but both were nonsignificant. In model 3, two-way interactions between T1 antisocial behavior and both types of classroom norms were added. The interaction with status norms was nonsignificant, whereas an interaction between T1 antisocial behavior and descriptive norms emerged as significant ($b = .08$, $SE = .03$, $p = .006$). Post-hoc probing of this interaction revealed that the positive association between T1 and T2 antisocial behavior was stronger in classrooms with high descriptive norms (+1 SD) ($b = .49$, $SE = .04$, $p < .000$) than in classrooms with average ($b = .41$, $SE = .03$, $p < .000$) or low norms (-1 SD) ($b = .32$, $SE = .05$, $p < .001$). These effect sizes, although variable, remained in the medium range. Two-way and three-way interactions with sex and grade were added in models 4 and 5, respectively. However, these additions did not improve model fit and were not significant. Therefore, we present the most parsimonious model, which excluded any two-way and three-way sex or grade interactions.

Results from multilevel linear regressions predicting T2 depressive symptoms are presented in Table 3. The unconditional model showed that 94.27% ($p < .001$) of the variation in students' T2 depressive symptoms were explained by individual differences (level 1) and 5.73% could be attributed to differences between classrooms. In model 1, sex (being a girl) and higher levels of

T1 depressive symptoms were significantly associated with higher T2 depressive symptoms ($b = .17$, $SE = .05$, $p = .002$ and $b = .52$, $SE = .03$, $p < .000$, respectively) (i.e., effect sizes were small for sex and large for T1 depressive symptoms). No significant main effects of grade or T1 antisocial behavior were found. In model 2, the main effects of status norms and descriptive norms were added but were not significant. Next, two-way interactions between T1 antisocial behavior and descriptive norms and status norms, respectively, were included in model 3. The interaction between T1 antisocial behavior and descriptive norms was nonsignificant, whereas the two-way interaction between T1 antisocial behavior and status norms emerged as significant ($b = -.13$, $SE = .03$, $p < .001$). The decomposition of this interaction revealed a small, positive association between T1 antisocial behavior and depressive symptoms at T2 when status norms were unfavorable (-1 SD) ($b = .15$, $SE = .04$, $p < .001$). However, there was a small, negative association between T1 antisocial behavior and T2 depressive symptoms in classrooms with favorable status norms (+1 SD) ($b = -.11$, $SE = .05$, $p = .018$). In classrooms with neutral norms, antisocial behavior was not significantly associated with T2 depressive symptoms ($b = .02$, $SE = .03$, $p = .586$). The addition of two-way interactions with sex in model 4 significantly improved model fit, but because no specific interactions with sex emerged as significant, the more parsimonious model (i.e., model 3) was chosen. The addition of two-way interactions with grade, as well as three-way interactions with sex and grade did not significantly improve model fit and none of the interactions emerged as significant.

Sensitivity Analyses

The results of the sensitivity analyses regarding the association between T1 and T2 antisocial behavior (following the exclusion of classes and students missing valid antisocial behavior data at both T1 and T2) were similar to those observed in the original analyses, with only very slight differences in effect sizes. In model 1, sex (being a girl) and T1 antisocial behavior were significantly associated with T2 antisocial behavior ($b = -.27$, $SE = .07$, $p < .001$, and $b = .46$, $SE = .04$, $p < .000$, respectively). The interaction between T1 antisocial behavior and descriptive norms was also significant ($b = .12$, $SE = .04$, $p < .001$). The breakdown of this interaction showed that the association between T1 antisocial behavior and T2 antisocial behavior was much stronger in classrooms with high descriptive norms ($b = .51$, $SE = .04$, $p < .000$), compared to classrooms with average ($b = .39$, $SE = .04$, $p < .000$) or low norms ($b = .27$, $SE = .06$, $p < .001$).

The results of the sensitivity analyses regarding the association between T1 antisocial behavior and T2 depressive symptoms also yielded similar patterns as those in the original sample, with only minor differences in effect size. In model 1, sex and T1 depressive symptoms continued to be significantly associated with T2 depressive symptoms ($b = .14$, $SE = .06$, $p = .028$ and $b = .54$, $SE = .03$, $p < .000$, respectively). The interaction between T1 antisocial behavior and status norms remained significant ($b = -.08$, $SE = .04$, $p = .022$). Post-hoc probing using simple slopes showed that the association between T1 antisocial behavior and T2 depressive symptoms was nonsignificant when norms were neutral ($b = -0.00$, $SE = .04$, $p = .962$). However, T1 antisocial behavior was negatively associated with T2 depressive symptoms when status norms were highly favorable (at + 2 SD; $b = -.16$, $SE = .08$, $p = .044$) and positively associated with T2 depressive symptoms when status norms were highly unfavorable (at - 2 SD; $b = .16$, $SE = .08$, $p = .042$).

Discussion

The first objective of the present study was to examine the potential moderating effects of classroom status norms and descriptive norms on the stability of youth's antisocial behavior over the course of one academic year. The second goal was to examine whether status norms or descriptive norms moderate the association between initial antisocial behavior and later depressive symptoms. The third objective was to examine potential moderating effects of sex and grade on these associations.

The results showed that descriptive, but not status norms moderated the stability of antisocial behavior over the course of the year when both norms were included simultaneously in the analyses. Specifically, youth exhibiting high levels of antisocial behavior were more likely to show increased antisocial behavior in classrooms with strong descriptive norms than in classrooms with average or weak descriptive norms. These findings are contrary to the notion that social rejection leads these youth to maintain and even increase their antisocial behavior, as posited by the social failure model (Capaldi & Stoolmiller, 1999). Rather, the present findings highlight the potential role of social information processing and social learning theories in antisocial behaviors and provide support for the notion that "violence is contagious" (Bandura, 1973; Huesmann,

2018). First, according to social information processing theory (Huesmann, 2018), aggressive individuals have a larger repertoire of aggressive scripts (i.e., programs for behavior learned in early development) and, for this reason, are more likely to retrieve aggressive scripts when confronted with a social problem. This may explain why youth high in antisocial behavior were especially susceptible to potential influence by high mean levels (i.e., a high prevalence) of antisocial behavior in their classrooms. Secondly, social learning theory (Bandura, 1973) maintains that observation and imitation processes are partly responsible for the acquisition of social behavior—a proposition backed by ample empirical evidence (Akers & Jennings, 2015). Naturally, in classrooms with high mean levels of antisocial behavior, there are more opportunities for the observation and imitation of these behaviors. Indeed, several studies have found that high within-classroom mean levels of deviant and aggressive behavior predict increases in those behaviors (Busching & Krahé, 2018; Frey et al., 2017; Guerra et al., 2003; Thomas et al., 2011), while other studies have demonstrated moderating effects of descriptive norms such that individuals' aggression increased in highly aggressive classrooms (Kellam et al., 1998). In classrooms with low mean levels of antisocial behavior, students may be more likely to model alternative, non-antisocial behaviors, such as collaboration and generosity. All students—including those high in antisocial behavior at the beginning of the school year—thus have more opportunities to observe (and imitate) prosocial behaviors in these classrooms. Importantly, like antisocial behavior, such prosocial behaviors have also been shown to be contagious (Fowler & Christakis, 2010) and prior work has demonstrated that mean class levels of prosocial behavior predict less antisocial behavior at the individual level over time (Hofmann & Müller, 2018). Interestingly, descriptive rather than status norms played a role in the stability of antisocial behavior when both norms were examined simultaneously within statistical models. These findings suggest that—at least among elementary-level students—the frequency of exposure to antisocial behavior plays a more prominent role in the stability of antisocial behavior than the social standing of the modeling agent. Thus, descriptive norms (i.e., the prevalence of a behavior) should not be overlooked when examining group-level processes in classroom settings, especially in regard to the stability of antisocial behavior. It bears mention, however, that status norms and descriptive norms were presumed to operate independently, although a small, but significant correlation was observed between the two norms. It may be that these two norms interact, such

that the predictive power of status norms increases when descriptive norms are high (or low). While this question was beyond the scope of this study, future research should clarify this question.

Regarding this study's second objective, results showed that status norms moderated the association between initial antisocial behavior and later depressive symptoms. As expected, youth with high levels of antisocial behavior in classrooms with unfavorable status norms showed increased depressive symptoms at the end of the year. In contrast, the association between initial antisocial behavior and later depressive symptoms was insignificant in classrooms with neutral status norms and even negative in classrooms with favorable status norms, such that youth with high initial levels of antisocial behavior showed fewer depressive symptoms at the end of the year. These findings provide some nuance to the social failure model (Capaldi & Stoolmiller, 1999), which proposes that antisocial behavior in childhood leads to adverse social experiences, namely social rejection, which in turn leads to depressive symptoms. Indeed, the present results suggest that, despite their disruptive behavior, youth high in antisocial behavior are not invariably rejected and thus do not systematically develop depressive symptoms. The fact that youth with high initial levels of antisocial behavior demonstrated fewer depressive symptoms at the end of the year in classrooms where antisocial behavior was linked to high social preference (i.e., a favorable status norm) supports the notion that social acceptance may act as a protective factor against the development of depression. This is in line with prior work showing that improved peer acceptance may be partially responsible for reduced levels of emotional difficulties among youth with behavioral and emotional difficulties (Menting et al., 2015). Throughout late childhood and adolescence, acceptance and belonging are important developmental goals and, according to sociometer theory (Leary & Baumeister, 2000), peer acceptance fosters higher levels of self-esteem which, in turn, predicts psychological well-being (Henriksen et al., 2017; In-Albon et al., 2017). The current findings provide further evidence that rejection is the vessel through which youths' early antisocial behavior may lead to more depressive symptoms, but also illustrate that the association between antisocial behavior and social rejection is context dependent. Indeed, in some classrooms, youth exhibiting high levels of antisocial behavior may even enjoy privileged social status (e.g., high social acceptance) and hence benefit from better emotional adjustment than their peers.

The observed associations were not moderated by sex. The lack of sex moderation is in line with most previous studies on the role of descriptive norms in the stability of youth's aggressive behavior (Busching & Krahe, 2018; Rohlf et al., 2016; but see Kellam et al., 1998, for contrasting results). Differences in study design may be responsible for these diverging results: Kellam and colleagues (1998) examined the effects of descriptive norms over the course of a six-year period, whereas other research, including the present study, looked at these questions over a much shorter timeframe. It may be that descriptive norms play a role in girls' and boys' antisocial behavior and aggressive behavior in the immediate course, but that—as suggested by Kellam and colleagues (1998)—this effect gradually dissipates over longer intervals for girls, but not boys, giving way to other sources of influence. Regardless, the question of sex differences in the moderating effects of descriptive norms on individual-level antisocial behavior warrants further investigation. Also, while no previous study examined the moderating effects of descriptive or status classroom norms on the association between antisocial behavior and depressive symptoms, the lack of sex moderation in the present study is not entirely surprising. Indeed, prior work exploring the mediating link of peer rejection in the antisocial behavior-depression association also found these associations to be sex-invariant (Gooren et al., 2011; Ladd & Troop-Gordon, 2003; van Lier & Koot, 2010). Thus, our results support the evidence suggesting that antisocial girls and boys are similarly susceptible to the negative effects of peer rejection within classroom settings but go further to suggest that both sexes also benefit similarly from the positive effects of peer acceptance.

Grade was also not a significant moderator of the temporal stability of antisocial behavior or the link between antisocial behavior and depressive symptoms and the moderating effects of social norms in this regard. This concurs with a previous study where grade did not moderate the main effect of descriptive norms on elementary students' aggression (Frey et al., 2017). Elementary students exhibiting high levels of antisocial behavior may be susceptible to their classroom-specific observation and imitation processes involved in the development and maintenance of antisocial behavior, regardless of grade level. The lack of grade moderation in these associations seems to contrast with the notion that high social standing may be a more salient developmental goal for older youth compared to younger children (LaFontana & Cillessen, 2010). However, extensive research examining the association between peer rejection and depression, or

internalizing symptoms, has found that this link holds true throughout late childhood and into adolescence (Prinstein et al., 2018; Rubin et al., 2008). That work, in conjunction with the present findings, suggests that highly antisocial children and adolescents are susceptible to developing depressive symptoms when experiencing classroom-specific peer rejection, regardless of their grade level.

Strengths and Limitations

This study has a number of strengths. One is the use of a short-term longitudinal design with a large sample of elementary-level students to ascertain the role of classroom norms in the development of individual-level behaviors over the course of the school year. The assessment of two types of social norms to examine the role of group-level processes on individual-level behaviors is an additional strength, because this allowed for testing of the unique effects of these norms on different psychosocial associations. Another asset of the present study is the use of self-reports for antisocial behavior and of peer ratings for depressive symptoms, thus avoiding inflated associations due to shared method variance.

Our study also has certain limitations. First, antisocial behavior was operationalized as a general measure, yet prior studies have shown that antisocial behavior is comprised of violent and non-violent behaviors (Burt, 2012). Thus, future research should seek to examine the differential role of classroom norms in the development of violent and non-violent antisocial behavior and its link with depressive symptoms. Secondly, depressive symptoms were measured with a single peer-nominated item. While single-item measures are often as valid and reliable as their multi-item counterparts (Ahmad et al., 2014), they may not capture the complexity of youth's depressive symptoms. Thus, future studies should use a multi-item scale to measure youth's depressive symptoms and should also seek to include a self-report measure, given that depressive symptoms are first and foremost based on an individual's experience. Additionally, while the present study did compare two types of norms, injunctive norms (i.e., how one "ought" to behave in a social context) (Henry et al., 2000) were not assessed. However, injunctive norms may be especially pertinent when examining the stability of antisocial behavior. Future studies should include injunctive norms to compare the relative effects of the different norms simultaneously and ensure a more accurate representation of these group-level processes. Future research should also

investigate whether results may be generalized to adolescents, as antisocial behavior peaks in mid to late adolescence (Tremblay, 2010) and depressive symptoms are more frequent in that age group (Fernandez Castelao & Kröner-Herwig, 2013). Finally, our study sample was mostly comprised of students of Canadian descent (or with at least one parent of Canadian descent). However, extensive research has shown that classroom norms play a role in students' socio-emotional adjustment and behavioral outcomes in different countries with diverse cultural traditions (Chang, 2004; Laninga-Wijnen et al., 2017; Veenstra et al., 2018). Thus, our findings may generalize to other cultural contexts in different countries, but replication studies are needed to verify this possibility.

Conclusion

Despite these limitations, the results from the present study offer new insight into the role of classroom descriptive norms in the stability of antisocial behavior as well as the role of status norms in the development of depressive symptoms among youth engaging in high levels of antisocial behavior. These youth showed higher stability of antisocial behavior in classrooms with strong descriptive norms than in classrooms with average or low descriptive norms. On the other hand, status norms play a role in the development of depressive symptoms among youth participating in antisocial behavior. These students experience more depressive symptoms in classrooms with unfavorable status norms but are protected from the development of depressive symptoms in classrooms with neutral and favorable status norms. From a theoretical perspective, these findings highlight the role of social learning theory (Bandura, 1973) in the stability of antisocial behavior among elementary students and suggest that it is important to consider descriptive norms when examining the stability of youth's antisocial behavior in future studies. Moreover, the findings from this study show that—contrary to the theoretical underpinnings of the social failure model—the development of depressive symptoms among youth high in antisocial behavior is context dependant. Given that classroom norms play a role in these youth's behavioral and emotional adjustment, classrooms may be optimal contexts for interventions seeking to reduce the frequency of antisocial behavior among elementary students, which should then contribute to improved socio-emotional adjustment.

Table 2.1

Bivariate Correlations Between Individual-Level Variables for Boys and Girls

| Variables | 1 | 2 | 3 | 4 | 5 |
|---------------------------|------|-------|-------|-------|-------|
| 1. Grade | - | -.07 | -.06 | -.01 | -.01 |
| 2. Antisocial Behavior T1 | -.05 | - | .42** | .05 | -.06 |
| 3. Antisocial Behavior T2 | -.06 | .61** | - | -.02 | -.04 |
| 4. Depressive Symptoms T1 | .06 | .17** | .16** | - | .58** |
| 5. Depressive Symptoms T2 | .04 | .28** | .16** | .53** | - |

Note. Results for boys are presented in the above diagonal and results for girls in the lower diagonal.

* $p < .05$, ** $p < .01$

Table 2.2
Multilevel Regression Analyses Predicting T2 Antisocial Behavior

| Model | Parameter | Estimate (SE) | <i>p</i> | 95% CI Lower, Upper |
|-------|--|------------------|----------|---------------------|
| 0 | Log Likelihood = 2833.68 | | | |
| 1 | Log Likelihood = 2087.73 | | | |
| | χ^2 Change (df Change) = 745.95 (3)** | | | |
| | Sex | -.28 (.06) | <.001 | [-.39, -.17] |
| | Grade | .00 (.04) | .980 | [-.07, .07] |
| | T1 Antisocial Behavior | .45 (.03) | .000 | [.39, .51] |
| 2 | Log Likelihood = 2043.54 | | | |
| | χ^2 Change (df Change) = 44.19 (2)** | | | |
| | Sex | -.26 (.07) | <.001 | [-.40, -.12] |
| | Grade | .00 (.03) | .939 | [-.07, .08] |
| | T1 Antisocial Behavior | .44 (.03) | .000 | [.37, .51] |
| | Descriptive Norm | .02 (.04) | .662 | [-.06, .09] |
| | Status Norm | -.01 (.03) | .716 | [-.07, .05] |
| 3 | Log Likelihood = 2028.64 | | | |
| | χ^2 Change (df Change) = 14.90 (2)** | | | |
| | Sex | -.27 (.07) | <.001 | [-.41, -.13] |
| | Grade | .00 (.04) | .925 | [-.07, .08] |
| | T1 Antisocial Behavior | .40 (.04) | .000 | [.33, .47] |
| | Descriptive Norm | .02 (.04) | .702 | [-.06, .09] |
| | Status Norm | -.01 (.03) | .662 | [-.08, .05] |
| | T1 Antisocial Behavior * Descriptive Norm | .08 (.03) | .006 | [.02, .14] |
| | T1 Antisocial Behavior * Status Norm | -.04 (.03) | .185 | [-.11, .02] |

Note. Log Likelihood is used to compare model fit. Higher values indicate poorer model fit (Field, 2018). Antisocial behavior scores and norm values are z-standardized.

** $p < .01$, * $p < .05$

Table 2.3*Multilevel Regression Analyses Predicting T2 Depressive Symptoms*

| Model | Parameter | Estimate (SE) | <i>p</i> | 95% CI Lower, Upper |
|-------|--|------------------|----------|------------------------|
| 0 | Log Likelihood = 2959.52 | | | |
| 1 | Log Likelihood = 2183.97 | | | |
| | χ^2 Change (df Change) = 775.55 (4)** | | | |
| | Sex | .17 (.05) | .002 | [.06, .27] |
| | Grade | -.00 (.03) | .971 | [-.06, .06] |
| | T1 Depressive Symptoms | .52 (.03) | .000 | [.47, .57] |
| | T1 Antisocial Behavior | .04 (.03) | .204 | [-.02, .09] |
| 2 | Log Likelihood = 2153.45 | | | |
| | χ^2 Change (df Change) = 30.52 (2)** | | | |
| | Sex | .15 (.06) | .018 | [.03, .27] |
| | Grade | -.01 (.03) | .809 | [-.07, .06] |
| | T1 Depressive Symptoms | .52 (.03) | .000 | [.47, .57] |
| | T1 Antisocial Behavior | .04 (.03) | .170 | [-.02, .10] |
| | Descriptive Norm | -.02 (.03) | .636 | [-.08, .05] |
| | Status Norm | .03 (.03) | .989 | [-.03, .08] |
| 3 | Log Likelihood = 2126.99 | | | |
| | χ^2 Change (df Change) = 26.46 (2)** | | | |
| | Sex | .16 (.06) | .011 | [.04, .28] |
| | Grade | -.01 (.03) | .861 | [-.07, .06] |
| | T1 Depressive Symptoms | .51 (.03) | .000 | [.46, .56] |
| | T1 Antisocial Behavior | .02 (.03) | .586 | [-.05, .08] |
| | Descriptive Norm | -.00 (.03) | .936 | [-.07, .06] |
| | Status Norm | .02 (.03) | .442 | [-.03, .07] |
| | T1 Antisocial Behavior * Descriptive Norm | -.01 (.03) | .772 | [-.05, .06] |
| | T1 Antisocial Behavior * Status Norm | -.13 (.03) | <.001 | [-.18, -.07] |

Note. Log Likelihood is used to compare model fit. Higher values indicate poorer model fit (Field, 2018). Antisocial behavior, depressive symptoms and norm values are *z*-standardized.

** $p < .01$, * $p < .05$

CHAPTER III

CONCLUSION

This doctoral essay aimed to examine the relative roles of within-classroom descriptive norms and status norms in the stability of elementary students' antisocial behavior and its association with depressive symptoms over the course of one school year. This chapter briefly reviews the results and then discusses the different themes addressed in the study, including the stability of antisocial behavior, its link with depressive symptoms, the role of classroom norms in these associations and how our findings concord with different theoretical models, including the social failure model (Capaldi & Stoolmiller, 1999), and related empirical findings. The chapter also addresses the study's strengths and limitations. Finally, the chapter abords the clinical implications of the findings and avenues for future research.

3.1 Summary and Discussion of Results

Capaldi and Stoolmiller (1999) proposed the social failure model to explain the relatively high stability of antisocial behavior over time and the frequent comorbidity between antisocial behavior and depressive symptoms. Briefly, the social failure model (Capaldi & Stoolmiller, 1999) theorizes that the moderately high stability of antisocial behavior and its co-occurrence with depressive symptoms is due to a cascade of events. Specifically, problematic behavior in childhood is believed to lead to social rejection which, in turn, exacerbates psychosocial maladjustment by fostering the maintenance of externalizing behaviors and the development of internalizing problems (Bowker & Etkin, 2014; Gooren et al., 2011). Yet, multiple studies examining the mediating effects of social rejection on the stability of different externalizing behaviors (including antisocial behavior) and their link with depressive symptoms report varying effect sizes (Gooren et al., 2011; Kiesner et al., 2002; Ladd & Troop-Gordon, 2003; Pedersen et al., 2007; Sturaro et al., 2011; van Lier & Koot, 2010). While age differences and differences in methodology may explain some of this variation, our study investigated whether this variability might be partly attributed to context-specific social norms reflecting the level of social acceptability or the prevalence of antisocial behavior (Veenstra et al., 2018).

We hypothesized that youngsters exhibiting higher levels of antisocial behavior in the fall would increase in antisocial behavior and depressive symptoms—in line with the social failure model—but only in classrooms with unfavorable status norms (i.e., when antisocial behavior was associated with low social status). In contrast, youth high in antisocial behavior were expected to maintain the same level of antisocial behavior or show a slight increase in classrooms with favorable classroom norms (i.e., when antisocial behavior was associated with high social status). We also expected no increase—or even a decrease—in antisocial youngsters’ depressive symptoms in such a classroom context. Regarding the effects of descriptive norms, we hypothesized that youth high in antisocial behavior at the beginning of the school year would engage in even more antisocial behavior at the end of the year in classrooms with strong descriptive norms (i.e., in classrooms where antisocial acts are highly frequent). We did not expect descriptive norms to play a role in antisocial youth’s depressive symptoms, however, and we hypothesized that the effects of status norms would be stronger than the effects of descriptive norms in the stability of antisocial behavior, as suggested by prior research. Given that results regarding sex differences in the stability of antisocial behavior and its link with depressive symptoms have been highly variable across previous studies, we did not propose any specific hypotheses in this regard. However, we expected that grade level would moderate these associations, as older students are more attuned to social status processes (LaFontana & Cillessen, 2010) and may therefore be more likely to adjust their behaviors to improve their social standing than younger students.

The stability coefficient for antisocial behavior over the course of one school year was moderate ($b = .46$) in our study, which is comparable to the coefficients ranging from .34 to .64 found in the literature (Klostermann et al., 2016; van Lier & Koot, 2010). Whereas some studies have reported a significant bivariate association between externalizing behaviors and internalizing symptoms, this association was insignificant in our study (that is, when contextual factors were not taken into consideration). However, as hypothesized, these associations varied depending on classroom norms for antisocial behavior. In light of these findings, it appears that the varying effect sizes reported by different studies examining the mediating effects of rejection on the link between externalizing behaviors and depressive symptoms (Gooren et al., 2011; Kiesner et al., 2002; Ladd & Troop-Gordon, 2003; Pedersen et al., 2007; Sturaro et al., 2011; van Lier & Koot, 2010) may

be partly attributed to the presence of variations in classroom-specific social norms. In accordance with the social norm literature, our results showed that classrooms are salient social contexts where group-level processes (i.e., social norms) may influence behaviors at the individual level. Specifically, descriptive norms moderated the stability of antisocial behavior such that the link between T1 and T2 antisocial behavior was stronger in classrooms with strong descriptive norms than in classrooms with neutral or weak norms. In addition, the link between antisocial behavior and depressive symptoms was moderated by status norms, such that initial antisocial behavior was positively associated with later depressive symptoms when status norms were unfavorable of antisocial behavior, but negatively associated with depressive symptoms when norms were favorable. These associations did not vary across grade or sex.

3.1.1 The Role of Social Norms in the Development and Stability of Antisocial Behavior

Contrary to our hypotheses, descriptive norms alone moderated the stability of antisocial behavior when both types of norms were included simultaneously in the statistical models. These findings are contrary to the theoretical underpinnings of the social failure model, which posits that negative social experiences, like peer rejection, lead to the maintenance or increase of antisocial behaviors. Instead, in accordance with Bandura's Social Learning Theory (1973), our results suggest that frequent exposure to antisocial acts plays a more prominent role in the stability of elementary students' antisocial behavior than does the social acceptance or rejection associated with that behavior. In classrooms where antisocial acts occur frequently, students have more opportunities to observe and imitate those behaviors, resulting in their maintenance over time. However, our finding that antisocial behavior showed most temporal stability in classrooms where antisocial behavior was most frequent may also reflect possible gene-environment interaction processes (that is, an interaction between personal, heritable characteristics and exposure to varying degrees of peers' antisocial behavior). Such potential gene-environment processes are detailed in the following paragraphs.

Extensive research has examined the developmental course of antisocial behavior throughout the life span. A meta-review of 105 studies (Jennings & Reingle, 2012) found that among those systematically documented were the developmental trajectories as classified by Moffit's Developmental Taxonomy of Delinquency (Moffit, 1993, 2006): a non-antisocial group, an

adolescence-limited group and a persistent-high group. Importantly, genetic factors have been found to play an important role in the development of antisocial behavior (Ferguson, 2010). Specifically, while genetic factors account for around 29% of the variance (ranging from 23% to 35%) in the probability of following an adolescence-limited trajectory, they are particularly important for explaining a persistent-high trajectory of antisocial behavior, accounting for 50% of the variance on average (ranging from 31% to 70%) (Barnes et al., 2011, Zheng and Cleveland, 2015). What's more, a recent study (Brendgen et al., submitted) found that the genetic disposition for a persistent-high trajectory is most likely to be expressed if youth are exposed to highly antisocial friends. These results concord with those from the present study that the stability of high antisocial behavior over time is especially strong in classrooms where many students engage in such behavior.

However, the results from our study also showed that antisocial behavior remained stable, albeit at a more moderate level, even when descriptive classroom norms were weak (i.e., when very few students engaged in such behavior). Interestingly, the Brendgen et al. study (submitted) found that youth with a genetic vulnerability following a persistent high antisocial trajectory do not need to be exposed to maladaptive peer influence to express their genetic disposition, as genetic effects were still strong in the absence of antisocial friends. In other words, youth with a disposition for high antisocial behavior are likely to follow their developmental trajectory even in the presence of attenuating factors in their social environment, like non-antisocial friends or low exposure to antisocial behavior in their classroom. Indeed, it is possible that youth with a disposition for engaging in more moderate levels of antisocial behavior may be the most amenable to environmental influences, including their peers' deviant behavior. To test this notion, Vitaro and colleagues (1997) utilized a sample of boys from low socio-economic backgrounds to investigate the predictive effect of friend's disruptive behaviors (e.g., aggressiveness and opposition) on changes in youth's self-reported delinquency from ages 11 and 12 years (averaged) to age 13 years. The results showed that youth classified by their teachers as "highly disruptive" (i.e., above .75 SD) at 11 and 12 years of age continued to exhibit high levels of delinquency from ages 11/12 to age 13, irrespective of their friends' aggressive-disruptive behaviors. Initially "moderately conforming" (between -.75 SD and the mean) or "highly conforming" (below -.75 SD) boys were similarly unaffected by their friends' level of aggressive-disruptive behaviors. In contrast, boys

who were initially “moderately disruptive” (between the mean and +75 SD) and who had aggressive-disturbing friends subsequently showed more delinquent behaviors by age 13 than other initially moderately disruptive boys. Indeed, initially “moderately disruptive” boys with aggressive-disruptive friends engaged in the same levels of delinquency by 13 years of age as the initially “highly disruptive” group. These findings suggest that youth who engage in moderate levels of antisocial behavior may be more susceptible to peer influence than both highly antisocial and non-antisocial youth. Testing the idea of a curvilinear interaction between youth’s own antisocial behavior and their peers’ level of antisocial behavior (i.e., descriptive classroom norms in the context of our study) would have required the inclusion of a quadratic term for antisocial behavior at T1 and would also have required that all interactions be tested with that term as well. Such a test would likely also have required a greater variance of antisocial behavior than what was observed in our normative population sample. Nevertheless, future studies should consider investigating whether descriptive norms that favor antisocial behavior may foster the development of antisociality in youth with moderate previous levels of such behavior.

3.1.2 The Role of Social Norms in the Link Between Antisocial Behavior and Depressive Symptoms

In accordance with our hypotheses, status norms—rather than descriptive norms—moderated the link between antisocial behavior and depressive symptoms. Antisocial youth were susceptible to developing depressive symptoms when they were rejected by their classmates, which is not only coherent with the social failure model (Capaldi & Stoolmiller, 1999) but also with the psychobiological model of social rejection and depression (Slavich et al., 2010). Briefly, the latter proposes that the link between social rejection and depressive symptoms is due to individuals’ awareness of their rejection, which leads to negative self-referential cognitions and emotions. Perceived social rejection activates regions of the brain involved in processing negative affect (i.e., the anterior insula and the dorsal anterior cingulate cortex) (Lieberman & Eisenberger, 2009). Moreover, the perception of social rejection has been found to trigger a biological stress response via the activation of the hypothalamic-pituitary-adrenal axis (i.e., the system that regulates cortisol levels in the body) (Dickerson & Kemeny 2004). Through this pathway, perceived social rejection activates the immune system, thus initiating processes that promote inflammation (e.g., elevated levels of pro-inflammatory cytokines) (Miller et al., 2009). In turn, pro-inflammatory cytokines

send signals to the central nervous system to engage in “sickness behaviors” (e.g., anhedonia, fatigue, psychomotor slowing), thus replicating the physical symptoms commonly observed in major depressive episodes.

While our above-mentioned finding is in line with expectations, a perhaps more notable result concerns the fact that—when status norms were favorable of antisocial behavior (i.e., antisocial students were socially accepted)—a high level of antisocial behavior predicted a decrease in depressive symptoms at the end of the school year. Thus, contrary to the theoretical postulate of the social failure model, antisocial youth do not systematically experience social rejection (and, in turn, develop depressive symptoms). Rather, antisocial youth enjoy high social acceptance in some contexts despite their problematic behaviors and their high social status seems to act as a protective factor against the development of depression symptoms. The considerable variability of the social acceptability of antisocial behavior across different classrooms might be attributed to diverse factors, including youth’s personal characteristics, teachers’ behaviors and attitudes towards antisocial behaviors, as well as the structure of classroom peer networks. These different factors are addressed in the following paragraph.

According to the Social Skill Model (Ladd & Mize, 1983), youth’s social behaviors reflect personal deficiencies or competencies that impede (or enhance) children’s abilities to elicit positive responses from their peers. Thus, popular aggressive youth are believed to enjoy certain personal traits that contribute to their high social status, but which unpopular aggressive children do not possess. In line with this model, Rodkin and Roisman (2010) showed that popular aggressive children are more socially competent than unpopular aggressive children, who tend to engage in dysregulated and disruptive behaviors. These maladaptive behaviors are likely related to deficits in emotional functioning (including being able to recognize others’ emotions and to self-regulate their emotions) which are documented among many highly antisocial youth (van Goozen, Langley & Hobson, 2022). Such deficits make it difficult for these youngsters to attend to social cues and to adapt their social behaviors accordingly, resulting in peer rejection (Stormshak et al., 1999). Indeed, aggressive boys who are socially rejected are much less aware of how disliked they are by their peers than non-aggressive rejected boys (Zakriski & Coie, 1996). On the other hand, popular aggressive adolescents are perceived by their peers as having more

leadership qualities and tend to be seen as “cooler” and more athletic than their unpopular and non-aggressive peers (Pakaslashti & Keltikangas-Järvinen, 2001; Rodkin et al., 2000). Despite being viewed as leaders of the group, however, popular aggressive youth are not viewed as being friendly (Pakaslashti & Keltikangas-Järvinen, 2001).

Also in line with the notion that classroom norms for antisocial behavior are in part determined by other personal characteristics of antisocial youth, Laninga-Wijnen and colleagues (2020) demonstrated that a higher number of aggressive adolescents within a given classroom was associated with more favorable status norms for aggression (operationalised as the correlation between popularity and aggression) only when aggressive students were socially dominant (i.e., possessed power-related characteristics, such as leadership qualities or resource control). When aggressive youth were non-socially dominant, a higher number of aggressive youth in a given classroom was associated with weaker status norms. Although social dominance and popularity are two closely related social constructs, past research has elaborated the nuances between these two variables. For instance, Lease and colleagues (2002) explained that both social dominance and popularity involve social centrality and social influence in group settings. However, whereas popularity reflects youth’s social prestige and visibility, central to the notion of social dominance is youth’s ability to compete for and control social resources (e.g., deciding social activities, controlling peers’ attention, access to playmates). It bears mention that the above studies employed a general measure of aggression and did not differentiate between violent and non-violent forms of antisocial behavior. Thus, future research should seek to clarify if the personal characteristics of popular violent youth are different from those of popular youth engaging in non-violent antisocial behaviors (e.g., cheating, stealing). Nevertheless, there is ample evidence to support the notion that the social acceptability of antisocial behaviors depends, in part, on the personal characteristics of the youth engaging in those behaviors within different contexts.

Beyond students’ personal characteristics, an extensive body of research has demonstrated that teachers also influence students’ behaviors and peer experiences in the classroom and thus presumably also the prevailing social behavior norms (Farmer et al., 2011). For instance, prior work has shown that negative student-teacher interactions and punitive practices are associated with increased student aggression (Gorman-Smith et al., 2003). In contrast, “positive” teacher

behaviors (including the degree to which teachers are respectful and offer encouragement and reassurance to their students) has been associated with less problematic behavior (e.g., being disruptive, having difficulty following instructions) among children and adolescents (Mashburn et al., 2008; Oliver, Wehby & Reschly 2011). Additional teacher factors that have been predictively linked to students' level of aggressive behavior include teacher feedback (Gorman-Smith et al., 2003) and classroom management techniques, such as precorrection and behavior-specific praise (Reinke et al., 2015). Moreover, prior work has shown that teacher behavior may specifically contribute to the development and change in classroom norms for aggression. For instance, Velásquez and colleagues (2023) found that the perceived supportiveness of teachers (e.g., teachers who made more time to help to their students) predicted lower popularity norms for aggression (i.e., the degree to which popularity is associated with aggressive behaviors) at the end of the school year. On the other hand, teacher perceived as less supportive by their students predicted more favorable popularity norms for aggressive behaviors. Furthermore, prior work has demonstrated that teachers' beliefs and attitudes about the acceptability of students' aggressive behaviors play a role in shaping classroom norms. For example, teachers' disapproval of aggression has been associated with fewer aggressive behaviors among students (Gest & Rodkin, 2011) and teachers' acceptance of aggressive behaviors is predictive of a stronger (i.e., more favorable) popularity norm for aggressive behavior (Velásquez et al., 2023). The latter finding is particularly pertinent given that some social norms are constructed from students' attitudes and beliefs. That is, injunctive norms are composed of individuals' beliefs about how one should behave in a given context (Veenstra et al., 2018). In light of this research, it may be pertinent for future studies examining the role of classroom norms in antisocial students' socio-emotional adjustment and behavioral problems to investigate potential sequential effects between teachers' attitudes/discipline approaches and classroom norms.

Another factor that plays a role in the variability of the social acceptability of aggressive behaviors between different classrooms is the structure of classroom peer networks. For instance, past work has demonstrated that the degree of classroom embeddedness predicts the social status of aggressive youth (Ahn et al., 2010). Embeddedness refers to the degree to which the classroom network structure is hierarchical (high embeddedness) or egalitarian (low embeddedness). Ahn and colleagues (2010) found that students high in aggression were perceived as more popular by

their peers in highly hierarchical classrooms (i.e., high embeddedness), but as unpopular in classrooms more egalitarian (i.e., low embeddedness). Similar findings concerning the effects of classroom hierarchies on the social status of aggressive youth were reported by Laninga-Wijnen and colleagues (2019). These authors examined the degree to which classroom popularity hierarchies might predict popularity norms for aggression. The notion “popularity hierarchy” refers to the degree of variation in students’ popularity in a classroom, with high variation in popularity indicating a few highly popular students in the classroom (i.e., hierarchical structure). On the other hand, an egalitarian structure is reflected in small variations in popularity, as this is indicative of equal status among classmates. Specifically, Laninga-Wijnen and colleagues (2019) found that the classroom popularity hierarchy predicted popularity norms for aggression, such that classrooms with a hierarchical structure of popularity was associated with an increase in popularity norms for aggression later in the school year. Thus, the literature suggests that a less even distribution of social power among group members contributes to the development of a more hostile, aggressive environment. It bears mention that the above-mentioned studies addressed aggressive behaviors among youth. Future studies are needed to examine if these findings also apply to non-aggressive antisocial behavior.

3.2 Study Strengths and Limitations and Directions for Future Research

Our study has a number of strengths. One is the use of a short-term longitudinal design with a large sample of elementary-level students to ascertain the role of classroom norms in the development of individual-level behaviors over the course of the school year, allowing us to track changes in students’ behavior and emotional outcomes. The use of a longitudinal design over one school year also allowed us to limit the number of confounding factors, like the effects of changing groups in subsequent grades—and thus new classroom norms—influencing the variables of interest. The assessment of two types of social norms to examine the role of group-level processes on individual-level behaviors is an additional strength because this allowed us to test their unique main and moderating effects. Another asset of the present study is the use of different reporting sources for different variables (i.e., self-reports for antisocial behavior and peer ratings for depressive symptoms), thus avoiding inflated associations due to shared method variance.

Our study also has certain limitations. First, antisocial behavior was operationalised as a general measure, due to the small number of items pertaining specifically to violent antisocial behavior. Yet, prior studies have shown that antisocial behavior is comprised of violent and non-violent behaviors and that genetic factors play a more important role in the development of the former compared to the latter (60% vs. 48%) (Burt, 2012). Given that environmental factors explain more of the variance of non-violent antisocial behavior, (descriptive) norms may play a more important role in the stability of non-violent antisocial behavior than in the stability of violent antisocial behavior. Future research should seek to examine the differential role of classroom norms in the development and stability of violent and non-violent antisocial behavior and these behaviors' respective links with depressive symptoms. A second limitation of this study is the use of a single peer-nominated item to measure depressive symptoms. While single-item measures are often as valid and reliable as their multi-item counterparts (Ahmad et al., 2014), they may not capture the complexity of youth's depressive symptoms. Thus, future studies should use a multi-item scale to measure depressive symptoms. Studies should also seek to include a self-report measure, given that depressive symptoms are first and foremost based on individuals' subjective experiences. Although peer nomination measures are not typically used as a primary technique for assessing depression symptoms, there is some empirical support for their use in assessing internalizing symptoms and moderate correlations have been found with teacher ratings (Irvine et al., 2022; Pulkkinen et al., 1999). Still, given that the present findings regarding depression concord with theoretical assumptions and prior empirical evidence, it is unlikely that the use of a multi-item measure of depression would change the nature of the results. It should also be noted that the measure of depressive symptoms employed in this study is restricted to symptoms of sadness. However, depression in childhood may manifest as irritability rather than sadness (Stringaris et al., 2013), potentially resulting in an underrepresentation of some children with depressive symptomology. Nonetheless, the extent of this underrepresentation is likely minimal, as only a small proportion of youth (5.7%) experience depression exclusively through an irritable mood (Stringaris et al., 2013).

Finally, the research questions of our study should also be investigated with older students. While no grade moderation effects were observed in the age-restrained sample of our study, it will be important to test whether the results can be generalized to adolescence, when antisocial behavior

peaks (Tremblay, 2010) and depressive symptoms are more frequent (Fernandez Castelao & Kröner-Herwig, 2013). Indeed, the moderating effects of descriptive norms on the stability of antisocial behavior may be stronger among adolescents than among younger children, as the former have simply more opportunities to observe and imitate peers' antisocial behaviors than the latter. This would also allow us to capture the potential effects of descriptive norms on the short-term stability of antisocial behavior among youth in the adolescence-limited trajectory, who are more strongly influenced by environmental factors than youth in the persistent-high trajectory (Barnes et al., 2011, Zheng and Cleveland, 2015). Similarly, the moderating effects of status norms on the predictive association between antisocial behavior and depressive symptoms may be stronger for adolescents given the documented increase of internalizing problems among older youth (Fernandez Castelao & Kröner-Herwig, 2013; Zahn-Waxler et al., 2008). However, it may be pertinent for future studies examining these questions among adolescents to operationalise status norms with a measure of popularity rather than social acceptance/rejection given that social popularity becomes a more central developmental goal than being liked in adolescence (LaFontana & Cillessen, 2010). The use of a measure of popularity may thus better measure the social processes significant for youth in this age group.

A final point concerns potential sex moderation effects, which were not observed in our study. While no other study has specifically examined the moderating role of classroom norms in the link between antisocial behavior and depression symptoms, the mediating role of peer rejection in those associations has been found to be sex-invariant among children in previous research (Gooren et al., 2011; van Lier & Koot, 2010). As such, the lack of sex moderation in our study sample may not be surprising. Sex differences may, however, be observed among adolescents. Indeed, the social acceptability of antisocial behavior becomes more sex divergent as youth reach mid-adolescence, such that adolescent girls engaging in antisocial behavior are seen in a more unfavorable light than boys exhibiting those same behaviors (Chang, 2004; Smith et al., 2010). A possible sex moderation effect might be further emphasized by the gender gap in depression that develops in adolescence (Campbell et al., 2021). This gender gap may render girls high in antisocial behavior even more vulnerable to the development of depressive symptoms than highly antisocial boys in unfavorable contexts (i.e., when status norms indicate a strong disapproval of antisocial behavior by the peer group).

3.3 Clinical Implications

The results from this study further contribute to the literature demonstrating that group-level processes in classrooms play an important role in youth's socio-emotional adjustment. The findings also shed new light on the contextual-level factors that may be pertinent for future interventions targeting students' antisocial behavior in school settings. Consequently, our findings may have several important clinical and practical implications for teachers, support staff and school administrators.

First, to reiterate, our study findings demonstrate that social contexts—notably behavior norms among peers—play a significant role in the development and stability of antisocial behavior and its relationship with depressive symptoms. For this reason, interventions seeking to reduce youth's antisocial behaviors—and the fallout of such behaviors—should target all youth (i.e., universal intervention), rather than targeting specific youth with problematic behaviors only. Many of the most thoroughly researched universal intervention programs developed to date specifically focus on aggression (i.e., violent antisocial behavior), including the Good Behavior Game, Promoting Alternative Thinking Strategies (PATHS), and Tools for Getting Along (TFGA). These different intervention programs have been shown to be effective in changing students' aggressive behaviors over time (Durlak et al., 2011; Healy et al., 2020). Indeed, a recent review of 15 studies sought to investigate the effectiveness of different school-based interventions in reducing students' aggressive behaviors. The results from that review showed that almost all studies reported significant intervention effects on students' level of aggressive behavior (Healy et al., 2020). Moreover, a meta-analysis of 213 studies that involved 270,034 students in elementary through high school examined the effects of universal interventions on students' socio-emotional skills, attitudes, general conduct problems (such as disruptive behavior, aggression, and delinquency) and academic performance (Durlak et al., 2011). The examined intervention programs prioritized social and emotional learning, thus seeking to improve students' cognitive, affective and behavioral competencies (specifically, self-awareness, self-management, social awareness, relationship skills and responsible decision making). These skills are commonly lacking among antisocial youth but are necessary for the development and the maintenance of positive relationships and for the reduction of aggressive behaviors. The authors of this meta-analysis found

that—compared to controls—students in the intervention programs showed more social and emotional learning skills and positive behaviors, improved academic performances and fewer conduct problems. These results were moderated by certain factors, however, namely the degree to which the program was structured (e.g., the use of a step-by-step training approach, explicit learning goals) and the presence of problems during the implementation of the program. Of note, the meta-analysis by Durlak and colleagues (2011) revealed that, when compared to classroom-only programs, multi-component programs (e.g., classroom-based interventions that also included a parent component) did not offer any additional benefits for socio-emotional or behavioral outcomes. Thus, the findings from studies examining the effectiveness of universal programs suggest that changing classroom environments—and consequently classroom norms—may indeed be a crucial element for the success of interventions targeting youth’s problematic behaviors.

Importantly, although the above-mentioned studies intervention studies mainly focused on aggressive behavior as the primary outcome, they were successful in also diminishing other problem behaviors, including general delinquency, as previously mentioned. By reducing students’ antisocial behaviors at the individual-level, these intervention programs may thus also reduce the prevalence of general antisocial behavior in classroom settings—and hence classroom descriptive norms for antisocial behavior. Low descriptive norms should then contribute to a reduced risk of stable antisocial behavior among students over time (at least over the course of one school year, as suggested by the findings in our study). Moreover, based on the theoretical basis of the social failure model (Capaldi & Stoolmiller, 1999), the psychobiological model of social rejection and depression (Slavich et al., 2010), as well as the results from our study, it is reasonable to suggest that by reducing the frequency at which antisocial youth engage in deviant acts, one indirectly intervenes in their emotional adjustment as well. That is, by engaging less frequently in antisocial behavior, these youth might experience less social rejection (at least in unfavorable contexts) and thus be less likely to develop depressive symptoms.

However, school administrators looking to implement a norms-based intervention should also be aware that, given the weak association between descriptive norms (i.e., prevalence rates) and status norms of antisocial behavior, the deployment of a norms-based intervention targeting the reduction of antisocial behavior may not always affect the social acceptability of these behaviors (i.e., the

association between antisocial behavior and social acceptance versus rejection). Moreover, youth who remain highly antisocial in contexts where intervention programs have led to reduced acceptability of antisocial behavior may end up being (even more) ostracised by their schoolmates, which may then lead to increased depression symptoms. This phenomenon is known as the “healthy context paradox” in the literature on bullying and victimization (Yun & Juvonen, 2020). Thus, victimized youth show worse psychological adjustment in “healthy” contexts (i.e., contexts low in victimization) compared to victimized youth in contexts high in victimization (Laninga-Wijnen et al., 2023). Although healthy contexts in this regard pertain to the prevalence (i.e., the descriptive norms) of bullying, a similar pattern of results might apply to the acceptability of such behavior (i.e., status norms). While the mechanisms underlying this effect are currently unknown, it has been suggested that victims may be more likely to blame themselves for victimization in “healthier” contexts and that they may tend to compare themselves to non-victimized peers, who they likely perceive as being happier and possessing higher status (Laninga-Wijnen et al., 2023). A similar effect may take place among antisocial youth when exposed to norms-based interventions targeting the reduction of antisocial behavior. That is, in “healthier” contexts which are low in antisocial behavior and where antisocial behavior is rejected, antisocial youth may compare themselves to their non-antisocial peers and may blame themselves for their rejection status, thus exacerbating their depressive symptoms. To counter such potential effects, norms-based interventions should perhaps also simultaneously include targeted, individualized interventions for highly antisocial youth. These targeted interventions should focus on teaching social skills on a one-to-one basis to ensure that at-risk youth rapidly acquire the social skills necessary for developing and maintaining positive relationships, ultimately reducing the frequency of their antisocial behavior and their risk of developing depressive symptoms.

3.4 Conclusion

In conclusion, the contributions of the present doctoral essay can be summarized into two main points of interest. First, the social failure model (Capaldi & Stoolmiller, 1999), which emphasizes social rejection as a key mediator in the stability of antisocial youth’s behavior and their depressive symptoms, may need to be revised to take into consideration the fact that these associations vary in accordance with contextual-level factors—like social norms. Indeed, our findings demonstrate that antisocial youth experience more depressive symptoms in contexts where their behavior is

associated with social rejection, as posited by the social failure model. Our results also indicate, however, that antisocial youth may enjoy high social status in some contexts and ultimately be protected from the development of depressive symptoms. Secondly, this study emphasizes the importance of considering both descriptive norms and status norms when investigating the effect of group-level processes in youth's psychosocial experiences. Indeed, both types of norms play important, albeit distinct, roles in antisocial youth's behaviors and depressive symptoms. Specifically, our findings showed that descriptive norms, rather than status norms, moderate the stability of antisocial behavior. Highly antisocial youth exhibited more deviant acts when these behaviors were more frequent in their classroom. These findings highlight the role of Social Learning Theory (Bandura, 1973) in the development and maintenance of antisocial behavior, but additional factors such as genetic vulnerabilities may also be at play, given that the effects of norms interacted with youth's previous levels of antisocial behavior rather than showing simple main effects. Future studies should seek to replicate these findings among older adolescents and should also investigate whether results generalize across violent and non-violent antisocial behavior. Despite this study's limitations, it contributes to our understanding of the role of group-level factors, like classroom norms, in youth's psychosocial adjustment.

APPENDIX A

INFORMATION AND CONSENT FORMS

FORMULAIRE DE CONSENTEMENT RECHERCHE SUR L'ADAPTATION PSYCHOSOCIALE À L'ENFANCE ET LES RELATIONS D'AMITIÉ

Chers parents,

Nous poursuivons pour la 2^e année un projet de recherche sur l'adaptation psychosociale et sur les relations d'amitié chez les jeunes de 4^e, 5^e et 6^e années. Ce projet est dirigé par trois chercheurs du Centre de recherche Fernand-Seguin (Lyse Turgeon, André Marchand et Frank Vitaro). Il a été approuvé par le directeur général adjoint de la Commission scolaire de la Pointe-de-l'Île, par le Conseil d'établissement et par la direction de l'école que votre enfant fréquente.

Ce projet comporte 2 objectifs distincts :

- 1) Mieux décrire l'état de la situation en ce qui a trait au bien-être psychologique des enfants de 9 à 12 ans dans une perspective développementale et mieux comprendre le rôle des relations d'amitié sur le plan de la santé psychologique des enfants de cet âge.
- 2) Vérifier l'efficacité des ateliers de gestion de l'anxiété que nous avons mis sur pied à l'intention des familles et examiner comment les enfants de 9 à 12 ans s'adaptent à certains événements de vie et parviennent à faire face aux difficultés qu'ils rencontrent.

Voici les 2 étapes du projet :

Le fait de participer à l'étape 1 ne vous engage pas nécessairement à participer à l'étape 2.

1) LES QUESTIONNAIRES EN CLASSE

Nous allons dans les classes pour administrer une série de questionnaires aux enfants durant 2 périodes consécutives cet automne et 2 autres périodes au printemps, selon un horaire convenu avec les enseignantes. Ces questionnaires portent sur les relations sociales, les habitudes de vie, l'estime de soi, les réactions anxieuses, etc. Les données recueillies sont strictement confidentielles et servent uniquement aux fins du présent projet. Un des questionnaires nous permet d'avoir un aperçu des enfants qui présentent un niveau d'anxiété un peu plus élevé que chez les autres enfants.

2) L'APPEL DES PARENTS

a) Nous appellerons seulement les parents des enfants pré-sélectionnés (environ 20%) pour leur expliquer la suite du projet et voir si c'est possible de les rencontrer à domicile afin de vérifier plus en profondeur s'ils sont éligibles pour participer à la suite du projet.

b) Nous offrirons à un certain nombre de familles des ateliers gratuits axés sur l'apprentissage de nouvelles façons de gérer le stress. Cette intervention d'une durée de 10 semaines débutera en janvier 2000. Elle aura lieu en dehors des périodes de classe, au Centre Fernand-Seguin. Les ressources étant limitées, les ateliers ne peuvent être offerts à toutes les familles. Les familles qui participeront aux ateliers seront choisies par tirage au sort. Les autres familles participeront à des rencontres d'évaluation.

N.B. Nous aurions besoin de votre permission pour obtenir le code permanent de votre enfant auprès de la direction de l'école. Si c'est possible, nous souhaiterions faire un suivi jusqu'à la fin du primaire à raison de 2 périodes au printemps à chaque année.

ÉCOLE FRANÇOIS LA BERNARDE

S.V.P. VEUILLEZ COMPLÉTER ET REMETTRE CE FORMULAIRE À VOTRE ENFANT QUE
VOTRE RÉPONSE SOIT OUI OU NON (en lettres moulées s.v.p.)

Nom de l'élève : _____ Classe : _____

Nom du parent: _____

Signature _____ Date : 4 SEPT. 99

NOUS VOUS DEMANDONS S.V.P. DE RÉPONDRE AUX 3 QUESTIONS SUIVANTES :

1) Les questionnaires en classe

J'accepte OU Je refuse
que mon enfant complète des questionnaires en classe.

2) L'appel des parents

J'accepte OU Je refuse
que vous m'appeliez pour me parler de la suite du projet s'il y a lieu. Nous appellerons environ 20% des parents. Vous serez tout à fait libre de participer.

Voici mon numéro de téléphone : _____

3) Le code permanent

J'accepte OU Je refuse
que vous demandiez le code permanent de mon enfant à la direction de l'école.

APPENDIX B

ETHICS CERTIFICATE



No. de certificat : 2022-4735
Date : 2024-03-08

CERTIFICAT D'APPROBATION ÉTHIQUE RENOUVELLEMENT

Le Comité d'éthique de la recherche pour les projets étudiants impliquant des êtres humains (CERPE FSH) a examiné le projet de recherche suivant et le juge conforme aux pratiques habituelles ainsi qu'aux normes établies par la *Politique No 54 sur l'éthique de la recherche avec des êtres humains* (avril 2020) de l'UQAM.

Titre du projet : The social failure model: Do classroom norms play a role in antisocial behavior and depression?

Nom de l'étudiant : Amy Burningham

Programme d'études : Doctorat en psychologie

Direction(s) de recherche : Mara Rosemarie Brendgen

Modalités d'application

Toute modification au protocole de recherche en cours de même que tout événement ou renseignement pouvant affecter l'intégrité de la recherche doivent être communiqués rapidement au comité.

La suspension ou la cessation du protocole, temporaire ou définitive, doit être communiquée au comité dans les meilleurs délais.

Le présent certificat est valide pour une durée d'un an à partir de la date d'émission. Au terme de ce délai, un rapport d'avancement de projet doit être soumis au comité, en guise de rapport final si le projet est réalisé en moins d'un an, et en guise de rapport annuel pour le projet se poursuivant sur plus d'une année au plus tard un mois avant la date d'échéance (**2025-03-08**) de votre certificat. Dans ce dernier cas, le rapport annuel permettra au comité de se prononcer sur le renouvellement du certificat d'approbation éthique.

A handwritten signature in black ink, appearing to read 'Sylvie Lévesque'.

Sylvie Lévesque
Professeure, Département de sexologie
Présidente du CERPÉ FSH

APPENDIX C

MEASUREMENT INSTRUMENTS

B.1 Self-Reported Delinquency Questionnaire.....59
B.2 Peer Evaluation Inventory.....60

B.1 Self-Reported Delinquency Questionnaire

MES COMPORTEMENTS

(Délinquance, Le Blanc)

DIRECTIVES

Note:

Dans ce questionnaire, nous te posons des questions sur ta famille, tes amis, ton école et sur des comportements déviants que tu aurais pu commettre au cours des 12 derniers mois. Encore une fois, rappelle-toi que toutes tes réponses resteront confidentielles et secrètes.

1. Au cours de cette année scolaire, as-tu brisé ou détruit par exprès des instruments de musique, des articles de sport ou d'autres équipements à l'école ?
 - 1 jamais
 - 2 une ou deux fois
 - 3 plusieurs fois
 - 4 très souvent
2. Au cours des 12 derniers mois, as-tu brisé ou détruit par exprès, des choses qui ne t'appartenaient pas?
 - 1 jamais
 - 2 une ou deux fois
 - 3 plusieurs fois
 - 4 très souvent
3. Au cours de cette année scolaire, as-tu été mis en dehors de la classe par un professeur?
 - 1 jamais
 - 2 une ou deux fois
 - 3 plusieurs fois
 - 4 très souvent
4. Au cours de cette année scolaire, as-tu pris et gardé des objets de 10 \$ ou plus appartenant à l'école?
 - 1 jamais
 - 2 une ou deux fois
 - 3 plusieurs fois
 - 4 très souvent
5. Au cours de cette année scolaire, t'es-tu servi de notes cachées ou d'autres moyens défendus pour tricher pendant un examen?
 - 1 jamais
 - 2 une ou deux fois
 - 3 plusieurs fois
 - 4 très souvent
6. Au cours de cette année scolaire, as-tu brisé, par exprès, des parties d'une école (vitres, murs, etc.)?
 - 1 jamais
 - 2 une ou deux fois
 - 3 plusieurs fois
 - 4 très souvent
7. Au cours des 12 derniers mois, as-tu pris et gardé quelque chose sans payer dans un magasin?
 - 1 jamais
 - 2 une ou deux fois
 - 3 plusieurs fois
 - 4 très souvent
8. Au cours des 12 derniers mois, as-tu menacé de battre quelqu'un pour le forcer à faire quelque chose qu'il ne voulait pas faire?
 - 1 jamais
 - 2 une ou deux fois
 - 3 plusieurs fois
 - 4 très souvent

Antisocial behavior scores were derived from items 1 through 8.

B.2 Peer Evaluation Inventory

LES PERCEPTIONS DES ENFANTS DE LA CLASSE

DIRECTIVES

Indique le numéro des quatre enfants de la classe qui correspondent le mieux à chaque description. Le numéro des enfants de la classe se trouve sur la feuille avec les noms.

LES AUTRES

| | | | | |
|--|--|--|--|--|
| 1. Ceux ou celles qui sont plus grands-es que les autres. | | | | |
| 2. Ceux ou celles qui sont trop gênés-es pour se faire des amis-es facilement. | | | | |
| 3. Ceux ou celles qui encouragent les autres enfants à s'en prendre à quelqu'un qu'ils-elles n'aiment pas (par des paroles ou des gestes). | | | | |
| 4. Ceux ou celles qui se sentent trop facilement blessés-es et qui sont faciles à faire pleurer. | | | | |
| 5. Ceux ou celles qui commencent une bataille à propos de rien. | | | | |
| 6. Ceux ou celles que tout le monde aime. | | | | |
| 7. Ceux ou celles qui disent des choses méchantes dans le dos des autres. | | | | |
| 8. Ceux ou celles qui rient des autres (les ridiculisent). | | | | |
| 9. Ceux ou celles qui ont très peu d'amis-es. | | | | |
| 10. Ceux ou celles qui dérangent les gens qui essaient de travailler. | | | | |

LES AUTRES

| | | | | |
|--|--|--|--|--|
| 11. Ceux ou celles qui ne portent pas attention au professeur ou qui ne l'écoutent pas. | | | | |
| 12. Ceux ou celles qui sont malheureux-euses ou tristes. | | | | |
| 13. Ceux ou celles avec qui tu aimes <u>le plus</u> jouer ou faire une activité agréable. | | | | |
| 14. Ceux ou celles qui souvent ne veulent pas jouer. | | | | |
| 15. Ceux ou celles qui disent qu'ils-elles peuvent battre tout le monde. | | | | |
| 16. Ceux ou celles que l'on ne remarque pas beaucoup ou qui sont seuls-es dans leur coin. | | | | |
| 17. Ceux ou celles qui exagèrent et qui racontent des histoires. | | | | |
| 18. Ceux ou celles dont tout le monde se moque. | | | | |
| 19. Ceux ou celles qui se plaignent toujours et qui ne sont jamais contents-es ou qui sont chialeux-euses. | | | | |
| 20. Ceux ou celles qui semblent toujours bien comprendre ce qui se passe. | | | | |
| 21. Ceux ou celles avec qui tu aimes <u>le moins</u> jouer ou faire une activité agréable. | | | | |
| 22. Ceux ou celles qui agissent comme des bébés. | | | | |
| 23. Ceux ou celles qui trichent. | | | | |
| 24. Ceux ou celles qui disent des mensonges. | | | | |
| 25. Ceux ou celles qui sont tes meilleurs-es amis-es. | | | | |

LES AUTRES

| | | | | |
|---|--|--|--|--|
| 26. Ceux ou celles qui se font bousculer ou frapper par les autres. | | | | |
| 27. Ceux ou celles qui n'étudient pas beaucoup. | | | | |
| 28. Ceux ou celles qui se font le plus disputer (chicaner) par le professeur. | | | | |
| 29. Ceux ou celles qui se font le plus exploiter et dominer par les autres. | | | | |
| 30. Ceux ou celles qui n'aiment pas parler en public devant la classe. | | | | |

Note: Scores for depression symptoms were derived from item 12. Social preference scores were derived from items 13 and 21.

REFERENCES

- Ahmad, F., Jhajj, A. K., Stewart, D. E., Burghardt, M., & Bierman, A. S. (2014). Single item measures of self-rated mental health: A scoping review. *BMC Health Services Research*, *14*(1), 1-11.
- Ahn, H. J., Garandeau, C. F., & Rodkin, P. C. (2010). Effects of classroom embeddedness and density on the social status of aggressive and victimized children. *The Journal of Early Adolescence*, *30*(1), 76-101.
- Akers, R. L., & Jennings, W. G., (2015). Social learning theory. In A. R. Piquero (Ed.), *The Handbook of Criminological Theory* (pp. 203-240). John Wiley & Sons, Inc.
<https://doi.org/10.1002/9781118512449.ch12>
- Angold, A., Erkanli, A., Silberg, J., Eaves, L., & Costello, E. J. (2002). Depression scale scores in 8–17-year-olds: effects of age and gender. *Journal of Child Psychology and Psychiatry*, *43*(8), 1052-1063.
- Bandura, A. (1977). *Social learning theory* (Vol. 1, pp. 141-154). Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1973). *Aggression: A Social Learning Analysis*. Prentice-Hall.
- Barnes, J. C., Beaver, K. M., & Boutwell, B. B. (2011). Examining the genetic underpinnings to Moffitt's developmental taxonomy: A behavioral genetic analysis. *Criminology: An Interdisciplinary Journal*, *49*(4), 923–954.
<https://doi.org/10.1111/j.1745-9125.2011.00243.x>
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173.
- Bartels, M., Van den Oord, E. J. C. G., Hudziak, J. J., Rietveld, M. J. H., Van Beijsterveldt, C. E. M., & Boomsma, D. I. (2004). Genetic and environmental mechanisms underlying stability and change in problem behaviors at ages 3, 7, 10, and 12. *Developmental Psychology*, *40*(5), 852.
- Bennett, D. S., Bendersky, M., & Lewis, M. (2005). Does the organization of emotional expression change over time? Facial expressivity from 4 to 12 months. *Infancy*, *8*(2), 167-187.
- Beeri, A., & Lev-Wiesel, R. (2012). Social rejection by peers: A risk factor for psychological distress. *Child and Adolescent Mental Health*, *17*(4), 216-221.

- Boutin, S., Roy, V., St-Pierre, R. A., Déry, M., Lemelin, J.-P., Martin-Storey, A., Poirier, M., Toupin, J., Verlaan, P., & Temcheff, C. E. (2020). The longitudinal association between externalizing and internalizing problems: An exploration of the dual failure model. *Developmental Psychology, 56*(7), 1372–1384. <https://doi.org/10.1037/dev0000935>
- Bowker, J. C., & Etkin, R. G. (2014). Mixed-grade rejection and its association with overt aggression, relational aggression, anxious-withdrawal, and psychological maladjustment. *The Journal of Genetic Psychology, 175*(1), 35-50.
- Boxer, P., Guerra, N. G., Huesmann, L. R., & Morales, J. (2005). Proximal peer-level effects of a small-group selected prevention on aggression in elementary school children: An investigation of the peer contagion hypothesis. *Journal of Abnormal Child Psychology, 33*(3), 325-338.
- Brendgen, M., Girard, A., Vitaro, F., Dionne, G., & Boivin, M. (2013). Do peer group norms moderate the expression of genetic risk for aggression? *Journal of Criminal Justice, 41*(5), 324-330.
- Brendgen, M., Girard, A., Vitaro, F., Dionne, G., & Boivin, M. (2015). Gene-environment correlation linking aggression and peer victimization: do classroom behavioral norms matter? *Journal of Abnormal Child Psychology, 43*(1), 19-31.
- Brendgen, M., Wanner, B., Morin, A. J., & Vitaro, F. (2005). Relations with parents and with peers, temperament, and trajectories of depressed mood during early adolescence. *Journal of Abnormal Child Psychology, 33*(5), 579-594. <https://doi.org/10.1007/s10802-005-6739-2>
- Brendgen, B., Vitaro, F., Zheng, Y., Girard, A., Dionne, G., & Boivin, M. (2024). *Gene-Environment Interplay Linking Friends' Antisociality With Different Developmental Trajectories of Antisocial Behavior During Adolescence. Manuscript submitted for publication.*
- Burt, S. A. (2012). How do we optimally conceptualize the heterogeneity within antisocial behavior? An argument for aggressive versus non-aggressive behavioral dimensions. *Clinical Psychology Review, 32*(4), 263-279. <https://doi.org/10.1016/j.cpr.2012.02.006>
- Busching, R., & Krahe, B. (2018). The contagious effect of deviant behavior in adolescence: A longitudinal multilevel study. *Social Psychological and Personality Science, 9*(7), 815-824. <https://doi.org/10.1177/1948550617725151>
- Bukowski, W.M., Brendgen, M., & Vitaro, F. (2007). Peers and socialization: Effects on externalizing and internalizing problems. In J. E. Grusec, & P. D. Hastings (Eds.), *Handbook of Socialization: Theory and Research* (355-381). New York, NY: Guilford Press.

- Campbell, O. L., Bann, D., & Patalay, P. (2021). The gender gap in adolescent mental health: A cross-national investigation of 566,829 adolescents across 73 countries. *SSM-Population Health, 13*.
- Capaldi, D. M., & Stoolmiller, M. (1999). Co-occurrence of conduct problems and depressive symptoms in early adolescent boys: III. Prediction to young-adult adjustment. *Development and Psychopathology, 11*(1), 59-84.
- Carroll, S. L., Mikhail, M. E., & Burt, S. A. (2023). The development of youth antisocial behavior across time and context: A systematic review and integration of person-centered and variable-centered research. *Clinical Psychology Review, 101*.
<https://doi.org/10.1016/j.cpr.2023.102253>
- Chang, L. (2004). The role of classroom norms in contextualizing the relations of children's social behaviors to peer acceptance. *Developmental Psychology, 40*(5), 691.
- Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior. In *Advances in experimental social psychology* (Vol. 24, pp. 201-234). Academic Press.
- Cillessen, A. H., & Marks, P. E. (2011). Conceptualizing and measuring popularity. In A. H. N. Cillessen, D. Schwartz, & L. Mayeux (Eds.), *Popularity in the peer system* (pp.25-56). New York: Guildford Press.
- Cillessen, A. H., & Mayeux, L. (2004). From censure to reinforcement: Developmental changes in the association between aggression and social status. *Child Development, 75*(1), 147-163.
- Cohen J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. New York, NY: Routledge Academic.
- Cohen, M. A. (1998). The monetary value of saving a high-risk youth. *Journal of Quantitative Criminology, 14*(1), 5-33.
- Cohen, M. A., & Piquero, A. R. (2009). New evidence on the monetary value of saving a high-risk youth. *Journal of Quantitative Criminology, 25*(1), 25-49.
- Cohen, G. L., & Prinstein, M. J. (2006). Peer contagion of aggression and health risk behavior among adolescent males: An experimental investigation of effects on public conduct and private attitudes. *Child Development, 77*(4), 967-983.
- Coie, J. D., Dodge, K. A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology, 18*(4), 557.

- Correia, S., Brendgen, M., & Vitaro, F. (2022). The role of norm salience in aggression socialization among friends: Distinctions between physical and relational aggression. *International Journal of Behavioral Development, 46*(5), 390-400.
- Craig, W., Schumann, L., Petrunka, K., Khan, S., & Peters, R. (2011). Government costs associated with delinquent trajectories. *International Journal of Child, Youth and Family Studies, 2*(2.1), 263-293.
- Defoe, I. N., Farrington, D. P., & Loeber, R. (2013). Disentangling the relationship between delinquency and hyperactivity, low achievement, depression, and low socioeconomic status: Analysis of repeated longitudinal data. *Journal of Criminal Justice, 41*(2), 100-107.
- Derzon, J. H. (2001). Antisocial behavior and the prediction of violence: A meta-analysis. *Psychology in the Schools, 38*(2), 93-106.
- Dickerson, S.S., Kemeny, M.E. (2004). Acute stressors and cortisol responses: a theoretical integration and synthesis of laboratory research. *Psychology Bulletin, 130*, 355–391.
- Dijkstra, J. K., & Gest, S. D. (2015). Peer norm salience for academic achievement, prosocial behavior, and bullying: Implications for adolescent school experiences. *The Journal of Early Adolescence, 35*(1), 79-96.
- Dijkstra, J. K., Lindenberg, S., & Veenstra, R. (2008). Beyond the class norm: Bullying behavior of popular adolescents and its relation to peer acceptance and rejection. *Journal of Abnormal Child Psychology, 36*(8), 1289.
- Dishion, T. J., & Tipsord, J. M. (2011). Peer contagion in child and adolescent social and emotional development. *Annual Review of Psychology, 62*, 189-214.
- Dishion, T. J., Spracklen, K. M., Andrews, D. W., & Patterson, G. R. (1996). Deviancy training in male adolescent friendships. *Behavior Therapy, 27*(3), 373-390.
- Dodge, K. A. (1986). A social information processing model of social competence in children. In M. Perlmutter (Ed.), *Minnesota Symposium in Child Psychology* (pp. 77–125). Hillsdale, NJ: Erlbaum.
- Dodge, K. A., & Crick, N. R. (1990). Social information-processing bases of aggressive behavior in children. *Personality and Social Psychology Bulletin, 16*(1), 8-22.
- Dodge, K. A., Lansford, J. E., Burks, V. S., Bates, J. E., Pettit, G. S., Fontaine, R., & Price, J. M. (2003). Peer rejection and social information-processing factors in the development of aggressive behavior problems in children. *Child Development, 74*(2), 374-393.

- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405-432.
- Evans, S. C., & Fite, P. J. (2019). Dual pathways from reactive aggression to depressive symptoms in children: Further examination of the failure model. *Journal of Abnormal Child Psychology, 47*, 85-97.
- Farmer, T. W., Lines, M. M., & Hamm, J. V. (2011). Revealing the invisible hand: The role of teachers in children's peer experiences. *Journal of Applied Developmental Psychology, 32*(5), 247-256.
- Fanti, K. A., Colins, O. F., & Andershed, H. (2019). Unraveling the longitudinal reciprocal associations between anxiety, delinquency, and depression from early to middle adolescence. *Journal of Criminal Justice, 62*, 29-34.
- Ferguson, C. J. (2010). Genetic contributions to antisocial personality and behavior: A meta-analytic review from an evolutionary perspective. *The Journal of Social Psychology, 150*(2), 160-180.
- Fernandez Castelao, C., & Kröner-Herwig, B. (2013). Different trajectories of depressive symptoms in children and adolescents: predictors and differences in girls and boys. *Journal of Youth and Adolescence, 42*, 1169-1182.
- Field, A. P. (2013). Multilevel Linear Models. In *Discovering Statistics Using IBM SPSS Statistics*, (pp. 814-866). London: Sage Publications Ltd.
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th edition). Sage Publications Ltd.
- Fontaine, N. M., Brendgen, M., Vitaro, F., Boivin, M., Tremblay, R. E., & Côté, S. M. (2019). Longitudinal associations between delinquency, depression and anxiety symptoms in adolescence: Testing the moderating effect of sex and family socioeconomic status. *Journal of Criminal Justice, 62*, 58-65.
- Fortin, L. (2003). Students' antisocial and aggressive behavior: Development and prediction. *Journal of Educational Administration, 41*(6), 669-688.
- Fowler, J. H., & Christakis, N. A. (2010). Cooperative behavior cascades in human social networks. *Proceedings of the National Academy of Sciences, 107*(12), 5334-5338. <https://doi.org/10.1073/pnas.0913149107>
- Frey, K. S., Strong, Z. H., & Onyewuenyi, A. C. (2017). Individual and class norms differentially predict proactive and reactive aggression: A functional analysis. *Journal of Educational Psychology, 109*(2), 178.

- Gest, S. D., & Rodkin, P. C. (2011). Teaching practices and elementary classroom peer ecologies. *Journal of Applied Developmental Psychology, 32*(5), 288-296.
- Gooren, E. M., van Lier, P. A., Stegge, H., Terwogt, M. M., & Koot, H. M. (2011). The development of conduct problems and depressive symptoms in early elementary school children: The role of peer rejection. *Journal of Clinical Child & Adolescent Psychology, 40*(2), 245-253.
- Gorman-Smith, D., & Metropolitan Area Child Study Research Group. (2003). Effects of teacher training and consultation on teacher behavior toward students at high risk for aggression. *Behavior Therapy, 34*(4), 437-452.
- Guerra, N. G., Rowell Huesmann, L., & Spindler, A. (2003). Community violence exposure, social cognition, and aggression among urban elementary school children. *Child Development, 74*(5), 1561-1576. <https://doi.org/10.1111/1467-8624.00623>
- Guimond, F. A., Brendgen, M., Correia, S., Turgeon, L., & Vitaro, F. (2018). The moderating role of peer norms in the associations of social withdrawal and aggression with peer victimization. *Developmental Psychology, 54*(8), 1519.
- Healy, S. R., Valente, J. Y., Caetano, S. C., Martins, S. S., & Sanchez, Z. M. (2020). Worldwide school-based psychosocial interventions and their effect on aggression among elementary school children: A systematic review 2010–2019. *Aggression and Violent behavior, 55*.
- Henriksen, I. O., Ranøyen, I., Indredavik, M. S., & Stenseng, F. (2017). The role of self-esteem in the development of psychiatric problems: a three-year prospective study in a clinical sample of adolescents. *Child and Adolescent Psychiatry and Mental Health, 11*(1), 1-9. <https://doi.org/10.1186/s13034-017-0207-y>
- Henry, D., Guerra, N., Huesmann, R., Tolan, P., VanAcker, R., & Eron, L. (2000). Normative influences on aggression in urban elementary school classrooms. *American Journal of Community Psychology, 28*(1), 59-81.
- Hofmann, V., & Müller, C. M. (2018). Avoiding antisocial behavior among adolescents: The positive influence of classmates' prosocial behavior. *Journal of Adolescence, 68*, 136-145. <https://doi.org/10.1016/j.adolescence.2018.07.013>
- Huesmann, L. R. (2018). An integrative theoretical understanding of aggression: A brief exposition. *Current Opinion in Psychology, 19*, 119-124. <https://doi.org/10.1016/j.copsy.2017.04.015>
- In-Albon, T., Meyer, A. H., Metzke, C. W., & Steinhausen, H. C. (2017). A cross-lag panel analysis of low self-esteem as a predictor of adolescent internalizing symptoms in a prospective longitudinal study. *Child Psychiatry & Human Development, 48*(3), 411-422. <https://doi.org/10.1007/s10578-016-0668-x>

- Irvine, T. J., Aults, C. D., & Menon, M. (2023). Self-esteem moderates the relationship between secure attachment and internalizing and externalizing problems in preadolescence. *Psychological reports, 126*(2), 758-774.
- Jennings, W. G., & Reingle, J. M. (2012). On the number and shape of developmental/life-course violence, aggression, and delinquency trajectories: A state-of-the-art review. *Journal of Criminal Justice, 40*(6), 472-489.
- Juvonen, J., & Ho, A. Y. (2008). Social motives underlying antisocial behavior across middle school grades. *Journal of Youth and Adolescence, 37*(6), 747-756. <https://doi.org/10.1007/s10964-008-9272-0>
- Keenan, K., Hipwell, A., Feng, X., Babinski, D., Hinze, A., Rischall, M., & Henneberger, A. (2008). Subthreshold symptoms of depression in preadolescent girls are stable and predictive of depressive disorders. *Journal of the American Academy of Child & Adolescent Psychiatry, 47*(12), 1433-1442.
- Kellam, S. G., Ling, X., Merisca, R., Brown, C. H., & Ialongo, N. (1998). The effect of the level of aggression in the first grade classroom on the course and malleability of aggressive behavior into middle school. *Development and Psychopathology, 10*(2), 165-185.
- Kiesner, J., Cadinu, M., Poulin, F., & Bucci, M. (2002). Group identification in early adolescence: Its relation with peer adjustment and its moderator effect on peer influence. *Child Development, 73*(1), 196-208. <https://doi.org/10.1111/1467-8624.00400>
- Kirchner, L., Schummer, S. E., Krug, H., Kube, T., & Rief, W. (2022). How social rejection expectations and depressive symptoms bi-directionally predict each other—A cross-lagged panel analysis. *Psychology and Psychotherapy: Theory, Research and Practice, 95*(2), 477-492.
- Klostermann, S., Connell, A., & Stormshak, E. A. (2016). Gender differences in the developmental links between conduct problems and depression across early adolescence. *Journal of Research on Adolescence, 26*(1), 76-89. <https://doi.org/10.1111/jora.12170>
- Kovacs, M. (1992). *Children's depression inventory*. North Tonawanda, NY: Multi-Health Systems, Inc.
- Ladd, G. W. (2006). Peer rejection, aggressive or withdrawn behavior, and psychological maladjustment from ages 5 to 12: An examination of four predictive models. *Child Development, 77*(4), 822-846. <https://doi.org/10.1111/j.1467-8624.2006.00905.x>
- Ladd, G. W., & Mize, J. (1983). A cognitive–social learning model of social-skill training. *Psychological Review, 90*(2), 127.

- Ladd, G. W., & Troop-Gordon, W. (2003). The role of chronic peer difficulties in the development of children's psychological adjustment problems. *Child Development, 74*(5), 1344-1367. <https://doi.org/10.1111/1467-8624.00611>
- LaFontana, K. M., & Cillessen, A. H. (2010). Developmental changes in the priority of perceived status in childhood and adolescence. *Social Development, 19*(1), 130-147. <https://doi.org/10.1111/j.1467-9507.2008.00522.x>
- Laninga-Wijnen, L., Harakeh, Z., Steglich, C., Dijkstra, J. K., Veenstra, R., & Vollebergh, W. (2017). The norms of popular peers moderate friendship dynamics of adolescent aggression. *Child Development, 88*(4), 1265-1283. <https://doi.org/10.1111/cdev.12650>
- Laninga-Wijnen, L., Harakeh, Z., Dijkstra, J. K., Veenstra, R., & Vollebergh, W. (2020). Who sets the aggressive popularity norm in classrooms? It's the number and strength of aggressive, prosocial, and bi-strategic adolescents. *Research on Child and Adolescent Psychopathology, 48*, 13-27.
- Laninga-Wijnen, L., Harakeh, Z., Garandeau, C. F., Dijkstra, J. K., Veenstra, R., & Vollebergh, W. A. (2019). Classroom popularity hierarchy predicts prosocial and aggressive popularity norms across the school year. *Child Development, 90*(5), 637-653.
- Laninga-Wijnen, L., Yanagida, T., Garandeau, C. F., Malamut, S. T., Veenstra, R., & Salmivalli, C. (2023). Is there really a healthy context paradox for victims of bullying? A longitudinal test of bidirectional within-and between-person associations between victimization and psychological problems. *Development and Psychopathology, 1-15*.
- Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. In *Advances in experimental social psychology* (Vol. 32, pp. 1-62). Academic Press.
- Lease, A. M., Musgrove, K. T., & Axelrod, J. L. (2002). Dimensions of social status in preadolescent peer groups: Likability, perceived popularity, and social dominance. *Social Development, 11*(4), 508-533. <https://doi.org/10.1111/1467-9507.00213>
- LeBlanc, M. (1994). Questionnaire de la délinquance autorévélee. *Rapport de recherché. Montréal: Université de Montréal, Département de psychoéducation.*
- Little, T. D., Jorgensen, T. D., Lang, K. M., & Moore, E. W. G. (2014). On the joys of missing data. *Journal of Pediatric Psychology, 39*(2), 151-162. <https://doi.org/10.1093/jpepsy/jst048>
- Loeber, R., & Schmalting, K. B. (1985). Empirical evidence for overt and covert patterns of antisocial conduct problems: A metaanalysis. *Journal of Abnormal Child Psychology, 13*(2), 337-353.

- Maas, C. J., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology*, 1(3), 86-92. <https://doi.org/10.1027/1614-2241.1.3.86>
- Mashburn, A. J., Pianta, R. C., Hamre, B. K., Downer, J. T., Barbarin, O. A., Bryant, D., ... & Howes, C. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development*, 79(3), 732-749.
- Menting, B., Koot, H., & van Lier, P. (2015). Peer acceptance and the development of emotional and behavioural problems: Results from a preventive intervention study. *International Journal of Behavioral Development*, 39(6), 530-540. <https://doi.org/10.1177/0165025414558853>
- Mercer, S. H., McMillen, J. S., & DeRosier, M. E. (2009). Predicting change in children's aggression and victimization using classroom-level descriptive norms of aggression and pro-social behavior. *Journal of School Psychology*, 47(4), 267-289. <https://doi.org/10.1016/j.jsp.2009.04.001>
- Mesman, J., Bongers, I. L., & Koot, H. M. (2001). Preschool developmental pathways to preadolescent internalizing and externalizing problems. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, 42(5), 679-689.
- Miller, G.E., Rohleder, N., Cole, S.W., 2009b. Chronic interpersonal stress predicts activation of pro- and anti-inflammatory signaling pathways 6 months later. *Psychosomatic Medicine*, 71, 57–62.
- Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review*, 100(4), 674–701. <https://doi.org/10.1037/0033-295X.100.4.674>
- Moffitt, T. E. (2006). Life-course-persistent versus adolescence-limited antisocial behavior. In *Developmental psychopathology: Risk, disorder, and adaptation, Vol. 3, 2nd ed.* (pp. 570–598). John Wiley & Sons, Inc.
- Moffitt, T., Caspi, A., Rutter, M., & Silva, P. (2001). *Sex differences in antisocial behavior: Conduct disorder, delinquency, and violence in the Dunedin longitudinal study*. Cambridge: Cambridge University Press.
- Murray, J., Shenderovich, Y., Gardner, F., Mikton, C., Derzon, J. H., Liu, J., & Eisner, M. (2018). Risk factors for antisocial behavior in low-and middle-income countries: A systematic review of longitudinal studies. *Crime and Justice*, 47(1), 255-364.
- Odgers, C. L., Moffitt, T. E., Broadbent, J. M., Dickson, N., Hancox, R. J., Harrington, H., Poulton, R., Sears, M. R., Thomson, W. M., & Caspi, A. (2008). Female and male antisocial trajectories: From childhood origins to adult outcomes. *Development and Psychopathology*, 20(2), 673-716.

- Oliver, R. M., Wehby, J. H., & Reschly, D. J. (2011). Teacher classroom management practices: Effects on disruptive or aggressive student behavior. *Campbell Systematic Reviews*, 7(1), 1-55.
- Olweus, D. (1979). Stability of aggressive reaction patterns in males: a review. *Psychological Bulletin*, 86(4), 852.
- Pakaslahti, L., & Keltikangas-Järvinen, L. (2001). Peer-attributed prosocial behavior among aggressive/preferred, aggressive/non-preferred, non-aggressive/preferred and non-aggressive/non-preferred adolescents. *Personality and Individual Differences*, 30(6), 903-916.
- Patterson, G. R., & Capaldi, D. M. (1990). A mediational model for boys' depressed mood. In J. Rolf, A. S. Masten, D. Cicchetti, K. H. Nuechterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 141–163). New York: Cambridge University Press.
- Patterson, G. R., & Stoolmiller, M. (1991). Replications of a dual failure model for boys' depressed mood. *Journal of consulting and clinical psychology*, 59(4), 491.
- Pedersen, S., Vitaro, F., Barker, E. D., & Borge, A. I. (2007). The timing of middle-childhood peer rejection and friendship: Linking early behavior to early-adolescent adjustment. *Child Development*, 78(4), 1037-1051. DOI: [10.1111/j.1467-8624.2007.01051.x](https://doi.org/10.1111/j.1467-8624.2007.01051.x)
- Peets, K., Pöyhönen, V., Juvonen, J., & Salmivalli, C. (2015). Classroom norms of bullying alter the degree to which children defend in response to their affective empathy and power. *Developmental Psychology*, 51(7), 913.
- Pekarik, E. G., Prinz, R. J., Liebert, D. E., Weintraub, S., & Neale, J. M. (1976). The pupil evaluation inventory. *Journal of Abnormal Child Psychology*, 4(1), 83-97. DOI: [10.1007/BF00917607](https://doi.org/10.1007/BF00917607)
- Prinstein, M. J., Rancourt, D., Adelman, C. B., Ahlich, E., Smith, J., & Guerry, J. D. (2018). Peer status and psychopathology. In W. M. Bukowski, B. Laursen, & K. H. Rubin (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 617–636). The Guilford Press.
- Pulkkinen, L., Kaprio, J., & Rose, R. J. (1999). Peers, teachers and parents as assessors of the behavioural and emotional problems of twins and their adjustment: the Multidimensional Peer Nomination Inventory. *Twin Research and Human Genetics*, 2(4), 274-285.
- Rambaran, A. J., Dijkstra, J. K., & Stark, T. H. (2013). Status-based influence processes: The role of norm salience in contagion of adolescent risk attitudes. *Journal of Research on Adolescence*, 23(3), 574-585. <https://doi.org/10.1111/jora.12032>

- Reinke, W. M., Stormont, M., Herman, K. C., Wachsmuth, S., & Newcomer, L. (2015). The brief classroom interaction observation–revised: An observation system to inform and increase teacher use of universal classroom management practices. *Journal of Positive Behavior Interventions*, *17*(3), 159-169.
- Reinfjell, T., Kårstad, S. B., Berg-Nielsen, T. S., Luby, J. L., & Wichstrøm, L. (2016). Predictors of change in depressive symptoms from preschool to first grade. *Development and Psychopathology*, *28*, 1517-1530. DOI: [10.1017/S0954579415001170](https://doi.org/10.1017/S0954579415001170)
- Rhee, S. H., & Waldman, I. D. (2002). Genetic and environmental influences on antisocial behavior: a meta-analysis of twin and adoption studies. *Psychological Bulletin*, *128*(3), 490.
- Rodkin, P. C., Farmer, T. W., Pearl, R., & Van Acker, R. (2000). Heterogeneity of popular boys: Antisocial and prosocial configurations. *Developmental Psychology*, *36*(1), 14.
- Rodkin, P. C., & Roisman, G. I. (2010). Antecedents and correlates of the popular-aggressive phenomenon in elementary school. *Child Development*, *81*(3), 837-850.
- Rohlf, H., Krahé, B., & Busching, R. (2016). The socializing effect of classroom aggression on the development of aggression and social rejection: A two-wave multilevel analysis. *Journal of School Psychology*, *58*, 57-72. DOI: [10.1016/j.jsp.2016.05.002](https://doi.org/10.1016/j.jsp.2016.05.002)
- Rubin, K. H., Bukowski, W. M., Parker, J. G., & Bowker, J. C. (2008). Peer interactions, relationships, and groups. In N. Eisenberg, W. Damon, & R. M. Lerner, (Eds.), *Handbook of child psychology: Social, emotional, and personality development*. Hoboken, NJ: Wiley.
- Saint-Laurent, L., 1990. Étude psychométrique de l'Inventaire de dépression pour enfants de Kovacs auprès d'un échantillon francophone. *Revue Canadienne des Sciences du Comportement*, *22*(4), 377–384.
- Salk, R. H., Hyde, J. S., & Abramson, L. Y. (2017). Gender differences in depression in representative national samples: Meta-analyses of diagnoses and symptoms. *Psychological Bulletin*, *143*(8), 783.
- Schaeffer, C. M., Petras, H., Ialongo, N., Poduska, J., & Kellam, S. (2003). Modeling growth in boys' aggressive behavior across elementary school: Links to later criminal involvement, conduct disorder, and antisocial personality disorder. *Developmental Psychology*, *39*(6), 1020.
- Scherbaum, C. A., & Ferrerter, J. M. (2009). Estimating statistical power and required sample sizes for organizational research using multilevel modeling. *Organizational Research Methods*, *12*(2), 347-367.

- Sentse, M., Scholte, R., Salmivalli, C., & Voeten, M. (2007). Person–group dissimilarity in involvement in bullying and its relation with social status. *Journal of Abnormal Child Psychology*, 35(6), 1009-1019.
- Slavich, G. M., O’Donovan, A., Epel, E. S., & Kemeny, M. E. (2010). Black sheep get the blues: A psychobiological model of social rejection and depression. *Neuroscience & Biobehavioral Reviews*, 35(1), 39-45. <https://doi.org/10.1016/j.neubiorev.2010.01.003>
- Smith, R. L., Rose, A. J., & Schwartz-Mette, R. A. (2010). Relational and overt aggression in childhood and adolescence: Clarifying mean-level gender differences and associations with peer acceptance. *Social Development*, 19(2), 243-269.
- Snyder, J. J., Schrepferman, L. P., Bullard, L., McEachern, A. D., & Patterson, G. R. (2012). Covert antisocial behavior, peer deviancy training, parenting processes, and sex differences in the development of antisocial behavior during childhood. *Development and Psychopathology*, 24(3), 1117-1138.
- Stormshak, E. A., Bierman, K. L., Bruschi, C., Dodge, K. A., & Coie, J. D. (1999). The relation between behavior problems and peer preference in different classroom contexts. *Child Development*, 70(1), 169-182.
- Stringaris, A., Maughan, B., Copeland, W. S., Costello, E. J., & Angold, A. (2013). Irritable mood as a symptom of depression in youth: prevalence, developmental, and clinical correlates in the Great Smoky Mountains Study. *Journal of the American Academy of Child & Adolescent Psychiatry*, 52(8), 831-840.
- Sturaro, C., Van Lier, P. A., Cuijpers, P., & Koot, H. M. (2011). The role of peer relationships in the development of early school-age externalizing problems. *Child Development*, 82(3), 758-765. <https://doi.org/10.1111/j.1467-8624.2010.01532>
- Snyder, J. J., Schrepferman, L. P., Bullard, L., McEachern, A. D., & Patterson, G. R. (2012). Covert antisocial behavior, peer deviancy training, parenting processes, and sex differences in the development of antisocial behavior during childhood. *Development and Psychopathology*, 24(3), 1117-1138. <https://doi.org/10.1017/S0954579412000570>
- Thomas, D. E., Bierman, K. L., & Conduct Problems Prevention Research Group. (2006). The impact of classroom aggression on the development of aggressive behavior problems in children. *Development and Psychopathology*, 18(2), 471. <https://doi.org/10.1111/j.14678624.2011.01586.x>
- Thomas, D. E., Bierman, K. L., Powers, C. J., & Conduct Problems Prevention Research Group. (2011). The influence of classroom aggression and classroom climate on aggressive–disruptive behavior. *Child Development*, 82(3), 751-757.

- Timmermans, M., van Lier, P. A., & Koot, H. M. (2010). The role of stressful events in the development of behavioural and emotional problems from early childhood to late adolescence. *Psychological Medicine*, *40*(10), 1659-1668.
- Tremblay, R. E. (2010). Developmental origins of disruptive behaviour problems: The ‘original sin’ hypothesis, epigenetics and their consequences for prevention. *Journal of Child Psychology and Psychiatry*, *51*(4), 341-367.
<https://doi.org/10.1111/j.1469-7610.2010.02211.x>
- Vaillancourt, T., & Hymel, S. (2006). Aggression and social status: The moderating roles of sex and peer-valued characteristics. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, *32*(4), 396-408.
<https://doi.org/10.1002/ab.20138>
- Van Goozen, S. H., Langley, K., & Hobson, C. W. (2022). Childhood antisocial behavior: A neurodevelopmental problem. *Annual Review of Psychology*, *73*(1), 353-377.
- van Lier, P. A., & Koot, H. M. (2010). Developmental cascades of peer relations and symptoms of externalizing and internalizing problems from kindergarten to fourth-grade elementary school. *Development and Psychopathology*, *22*(3), 569-582.
<https://doi.org/10.1017/S0954579410000283>
- Veenstra, R., Dijkstra, J. K., & Kreager, D. A. (2018). *Pathways, networks, and norms: A sociological perspective on peer research*. In W. M. Bukowski, B. Laursen, & K. H. Rubin (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 45–63). The Guilford Press.
- Veenstra, R., & Lodder, G. M. (2022). On the microfoundations of the link between classroom social norms and behavioral development. *International Journal of Behavioral Development*, *46*(5), 453-460.
- Velásquez, A. M., Saldarriaga, L. M., & Bukowski, W. M. (2023). Predicting changes in classroom aggression status norms: The role of teachers’ normative beliefs and students’ perceived support. *International Journal of Behavioral Development*, *47*(3), 275-281.
- Velásquez, A. M., Saldarriaga, L. M., Castellanos, M., & Bukowski, W. M. (2021). The effect of classroom aggression-related peer group norms on students' short-term trajectories of aggression. *Aggressive Behavior*, *47*(6), 672-684.
- Vitaro, F., Brendgen, M., Girard, A., Boivin, M., Dionne, G., & Tremblay, R. E. (2015). The expression of genetic risk for aggressive and non-aggressive antisocial behavior is moderated by peer group norms. *Journal of Youth and Adolescence*, *44*(7), 1379-1395.
<https://doi.org/10.1007/s10964-015-0296-y>

- Vitaro, F., Pedersen, S., & Brendgen, M. (2007). Children's disruptiveness, peer rejection, friends' deviancy, and delinquent behaviors: A process-oriented approach. *Development and Psychopathology*, *19*(2), 433-453. <https://doi.org/10.1017/S0954579407070216>
- Vitaro, F., Tremblay, R. E., Kerr, M., Pagani, L., & Bukowski, W. M. (1997). Disruptiveness, friends' characteristics, and delinquency in early adolescence: A test of two competing models of development. *Child Development*, 676-689.
- Vuchinich, S., Bank, L., & Patterson, G. R. (1992). Parenting, peers, and the stability of antisocial behavior in preadolescent boys. *Developmental Psychology*, *28*(3), 510.
- Wade, T. J., Cairney, J., & Pevalin, D. J. (2002). Emergence of gender differences in depression during adolescence: National panel results from three countries. *Journal of the American Academy of Child & Adolescent Psychiatry*, *41*(2), 190-198.
- Weeks, M., Ploubidis, G. B., Cairney, J., Wild, T. C., Naicker, K., & Colman, I. (2016). Developmental pathways linking childhood and adolescent internalizing, externalizing, academic competence, and adolescent depression. *Journal of Adolescence*, *51*, 30-40. <https://doi.org/10.1016/j.adolescence.2016.05.009>
- Welsh, B. C., Loeber, R., Stevens, B. R., Stouthamer-Loeber, M., Cohen, M. A., & Farrington, D. P. (2008). Costs of juvenile crime in urban areas: A longitudinal perspective. *Youth Violence and Juvenile Justice*, *6*(1), 3-27.
- Wichstrøm, L., Berg-Nielsen, T. S., Angold, A., Egger, H. L., Solheim, E., & Sveen, T. H. (2012). Prevalence of psychiatric disorders in preschoolers. *Journal of Child Psychology and Psychiatry*, *53*(6), 695-705.
- Wiesner, M. (2003). A longitudinal latent variable analysis of reciprocal relations between depressive symptoms and delinquency during adolescence. *Journal of Abnormal Psychology*, *112*(4), 633.
- Wolff, J. C., & Ollendick, T. H. (2006). The comorbidity of conduct problems and depression in childhood and adolescence. *Clinical Child and Family Psychology review*, *9*(3-4), 201-220.
- Wright, J. C., Giammarino, M., & Parad, H. W. (1986). Social status in small groups: Individual-group similarity and the social "misfit". *Journal of Personality and Social Psychology*, *50*(3), 523.
- Yun, H. Y., & Juvonen, J. (2020). Navigating the healthy context paradox: Identifying classroom characteristics that improve the psychological adjustment of bullying victims. *Journal of Youth and Adolescence*, *49*(11), 2203-2213.

Zahn-Waxler, C., Shirtcliff, E. A., & Marceau, K. (2008). Disorders of childhood and adolescence: Gender and Psychopathology. *Annual Review of Clinical Psychology, 4*, 275-303.

Zakriski, A. L., & Coie, J. D. (1996). A comparison of aggressive-rejected and nonaggressive-rejected children's interpretations of self-directed and other-directed rejection. *Child Development, 67*, 1048–1070.

Zheng, Y., & Cleveland, H. H. (2015). Differential genetic and environmental influences on developmental trajectories of antisocial behavior from adolescence to young adulthood. *Journal of Adolescence, 45*, 204–213.