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Understanding Relational and Physical Bullying Profiles:

The Importance of School Climate and Social Status

A dissertation proposal submitted in partial satisfaction of the requirements for the degree

Doctor of Philosophy in Counseling, Clinical, and School Psychology

by

Cecile Binmoeller

Committee in charge:

Professor Shane Jimerson, Chair

Professor Erin Dowdy

Professor Matthew Quirk

Professor Karen Nylund-Gibson

September 2018

The dissertation of Cecile Binmoeller is approved.

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June 2018

Understanding Relational and Physical Bullying Profiles:

The Importance of School Climate and Social Status

ACKNOWLEDGEMENTS

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September 2018

EDUCATION

University of California, Santa Barbara   September 2018
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    Ph.D., Counseling, Clinical, and School Psychology
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University of California, Santa Barbara   June 2014
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PRESENTATIONS

Binmoeller, C., & Jimerson, S.R. (2017, July). *How does MTSS implementation fidelity impact student academic and social-emotional progress?* Poster presented at the annual conference of the International School Psychology Association. Manchester, United Kingdom.

Binmoeller, C., & Jimerson, S.R. (2017, July). *Social-Ecological Factors that Increase Defending Behaviors and Decrease Victimization, Bullying, and Bystanding. A comparison across gender.* Poster presented at the annual conference of the International School Psychology Association. Manchester, United Kingdom.

Binmoeller, C. & Jimerson, S.R. (2017, February). *How Does School Climate Influence Relational and Physical Bullying Profiles?* Paper presented at the annual conference of the National Association of School Psychologists. San Antonio, Texas.

Binmoeller, C. & Jimerson, S.R. (2017, February). *Understanding Bullying Behaviors: The Importance of Social Status.* Poster presented at the annual conference of the National Association of School Psychologists. San Antonio, Texas.

Jimerson, S.R, Hibbard, J., & **Binmoeller, C.** &. (2017, February). *Beyond Grade Retention and Social Promotion: Promoting Student Success.* Paper presented at the annual conference of the National Association of School Psychologists. San Antonio, Texas.

Binmoeller, C., Yu, R., & Babcock, S. (2016, October). *Addressing the Needs of Foster Youth in Schools.* Paper presented at the annual conference of the California Association of School Psychologists. Newport Beach, California.

Binmoeller C., & Jimerson, S.R. (2016, August). *Ethical Considerations in School-Based Survey Research: Active Versus Passive Parental Consent.* Poster presented at the American Psychological Association. Denver, California.

Binmoeller C., & Jimerson, S.R. (2016, August). *Longitudinal Profiles of School Victimization: A Latent Transition Analysis.* Poster presented at the American Psychological Association. Denver, California.

Binmoeller, C., & Jimerson, S.R. (2016, June). *Relationships Between Heterogeneous Bullying Participant Profiles and Students' Social Capital.* Paper presented at the annual conference of the International School Psychology Association. Amsterdam, Netherlands.

Binmoeller, C., Salvador, E., & Jimerson, S.R. (2016, June). *Predicting Educational Attainment and SES Based on Mestizo Subgroups in Mexico.* Poster presented at the annual conference of the International School Psychology Association. Amsterdam, Netherlands.

Binmoeller, C. & Jimerson, S.R. (2016, February). *Critiquing Traditional Bully Participant Roles: A Latent Class Analysis.* Paper presented at the annual conference of the National Association of School Psychologists. New Orleans, Louisiana.

Binmoeller, C. (2016, February). *Restorative Justice: Teacher Attitudes, Knowledge, Fidelity, Confidence, and Perceived Barriers.* Poster presented at the annual conference of the National Association of School Psychologists. New Orleans, Louisiana.

Hunnicutt, K.L., Dougherty, D., Carnazzo, K., & **Binmoeller, C**. (2016, February). *Effect Sizes for Very Small Ns: Implications for Practitioners.* Poster presented at the annual conference of the National Association of School Psychologists. New Orleans, Louisiana.

Binmoeller, C. & Jimerson, S.R. (2015, October). *A Nuanced Perspective on Bully Participant Roles: A Comparison Across Ethnicity and Gender.* Paper presented at the annual conference of the California Association of School Psychologists. Riverside, California.

Binmoeller, C. (2015, October). *Implementing Restorative Justice: Teacher Experiences, Needs, Attitudes, and Perceptions.* Poster presented at the annual conference of the California Association of School Psychologists. Riverside, California.

Babcock, S. K., **Binmoeller, C.,** May, C., & Jimerson, S.R. (2015, October). *Power of Play: A Recess Intervention to Promote Problem Solving and Prosocial Play.* Paper presented at the annual conference of the California Association of School Psychologists. Riverside, California.

Binmoeller, C., & Jimerson, S. R. (2015, June). *Are Bullies Always Bullies? Identifying Bully Participant Roles.* Paper presented at the annual conference of the International School Psychology Association. Sao Paulo, Brazil.

Binmoeller, C., & Jimerson, S.R. (2015, June*). Examining the Factor Structure of the Bullying Attitudes Measure.* Poster presented at the annual conference of the International School Psychology Association. Sao Paulo, Brazil.

Binmoeller, C., & Jimerson, S.R. (2015, June). *Do Attitudes About Bullying Vary by Ethnicity and Gender?* Poster presented at the annual conference of the International School Psychology Association. Sao Paulo, Brazil.

Binmoeller, C., Haddock, A.D, Stein, R. & Jimerson, S.R. (2015, February). *Attitudes Towards Bullying, a Comparison Across Ethnicity and Gender.* Paper presented at the annual conference of the National Association of School Psychologists. Orlando, Florida.

Binmoeller, C., Stein, R., Jimerson, S.R., & Haddock, A.D. (2015, February). *Measuring Unseen Behavior: The Psychometric Properties of the BAM.* Poster presented at the annual conference of the National Association of School Psychologists. Orlando, Florida.

Babcock, S., **Binmoeller, C.,** May, C., & Jimerson, S.R., (2015, February). *Bullying Prevention Through Promoting Positive Peer Relationships: Empirically-Supported Curriculum.* Paper presented at the annual conference of the National Association of School Psychologists. Orlando, Florida.

May, C., **Binmoeller, C.,** & Babcock, S. (2015, February). *Power of Recess Play: Facilitating Problem Solving and Prosocial Behaviors.* Poster presented at the annual conference of the National Association of School Psychologists. Orlando, Florida.

Binmoeller, C. & Jimerson, S.R., (2015, January). *Examining the factor structure of a bullying attitudes measure and implications for students with disabilities.* Poster presented at the UC Special Education, Disability, and Risk Conference, Santa Barbara, CA.

Saldivar, E., **Binmoeller, C**., & Jimerson, S.R. (2014, November). *Mestizos según herencia étnica y color de piél.* Presented at *Estadísticas Etnoraciales en América Latina*. Paper presented at the Universidad del Valle, Cali, Colombia.

Jimerson, S.R., Stein, R., Haddock, A., **Binmoeller, C**., Babcock, S., & May, C. (2014, March). *Towards Understanding and Addressing Bullying at School: Evidence-Based Prevention and Intervention Strategies.* Workshop presented at the annual conference of the Australian Psychological Association. Melbourne, Australia.

Binmoeller, C., Stein, R., Haddock, A., Gopul, K., & Jimerson, S.R. (2014, February*). Promoting positive peer relationships: A collaborative approach to reducing bullying.* Mini Skills Workshop presented at the National Association of School Psychologists Conference. Washington DC.

Jimerson, S.R., Gillespie A., **Binmoeller C.,** & Rime J. W. (2014, February). *Playground Strategies to Promote Problem Solving and Reduce Discipline Referrals.* Poster to be presented at the American Psychological Association. Washington, DC.

Jimerson, S.R., Gillespie A., Haddock A., **Binmoeller C.,** & Rime J. W. (2013, August). *Playground Strategies to Promote Problem Solving and Reduce Discipline Referrals.* Poster presented at the American Psychological Association. Honolulu, Hawaii.

Larsen J., & **Binmoeller, C.** (2013, March). *Examination of the Cross-Cultural Validity of the Brief Symptom Inventory-18 in Low–Income Women.* Poster at the Society of Personality Assessment Annual Meeting. San Diego, CA.

Stein R., Haddock A., **Binmoeller C**., Jimerson, S.R. (2013, February). *Promoting positive peer relationships: A collaborative approach to reducing bullying.* Miniskills workshop presented at the Annual Convention of the National Association of School Psychologists, Seattle, WA.

Stein R., Haddock A., **Binmoeller C**., & Jimerson, S.R. (2012, October). *Promoting positive peer relationships: A collaborative approach to reducing bullying.* Miniskills workshop presented at the California Association of School Psychology Conference. Costa Mesa, CA.

PUBLICATIONS

Jimerson, S.R., Stein, R., & **Binmoeller, C.** (in press, 2015). Looping. In K. Chrisman and D. L. Couchenour (Eds.) *The SAGE Encyclopedia of Contemporary Early Childhood Education.* Thousand Oaks, CA: SAGE.

Binmoeller, C. & Jimerson, S.R. (2014). *ISPA research column: Research regarding second language learners and bilingual education.* International School Psychology Association, World-Go-Round, 41 (3), 29-32.

Binmoeller, C. & Felix, E. (accepted for publication). Bullying. In J. Ponzetti (Ed.). *Macmillan Encyclopedia of Intimate and Family Relationship.* Cenage.

Felix, E.D., **Binmoeller, C.**, Sharkey, J. D., Dowdy, E., Furlong, M. J., & Latham, N. (in press). The influence of different longitudinal patterns of peer victimization on psychosocial adjustment. *Journal of School Violence.*

Felix, E.D., **Binmoeller, C.**, Nylund-Gibson, K., Benight, C. C., Benner, A., & Terzieva, A. (under review). Addressing disaster exposure measurement issues with latent class analysis.

Felix, E.D.**,** Nylund-Gibson, K., Kia-Keating, M., Liu, S., **Binmoeller, C.**, & Terzieva, A. (under review). The influence of flood exposure and subsequent stressors on youth social-emotional health.

Journal Articles In Preparation
Binmoeller, C., Haddock A., & Jimerson, S.R. *A nuanced perspective on bully participant roles: Using a latent class analysis approach to examine verbal, physical, and relational bullying.*

Binmoeller, C., Stein, R., & Jimerson, S.R. *A bullying scale measuring student attitudes, communication skills, intervention competence, and perceptions of school effort*

Binmoeller, C., Stein, R., & Jimerson, S.R. *Bullying attitudes, communication skills, intervention competence and perceptions of school effort: A comparison across ethnicity and gender*

Binmoeller, C., Carnazzo, K.,R., & Hunnicut, K.L. *Implementing restorative justice in schools: teacher attitudes, knowledge, fidelity, confidence, and perceived barriers*

Nylund-Gibson, K., Muthén, B., **Binmoeller, C.**, Bellmore, A., Graham, S. *Stability and instability of peer victimization during middle school: Using latent transition analysis with covariates, distal outcomes, and modeling extensions*

Mireles-Rios, R., **Binmoeller, C**, & Nylund-Gibson K. *The mediating effects of a positive body image on health among Latina adolescents*

Salvador, E., **Binmoeller, C.,** & Jimerson, S. R. *Predicting educational attainment and SES based on Mestizo profiles in Mexico.*

Hunnicutt, K.,L., Dougherty, D., Carnazzo, K., & **Binmoeller, C**. *Effect sizes for very small Ns: Implications for practitioners.*

RESEARCH EXPERIENCE

Doctoral Dissertation   **September 2015 to June 2018**
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      Climate and Social Status

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Graduate Student Researcher   **June 2016 to August 2017**
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   Principal Investigator: Dr. Rebeca Mireles-Rios
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Project Coordinator   **September 2012 to June 2015**
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RESEARCH METHODOLOGY AND STATISTICS

Statistics Courses Taken
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- Linear Models for Data Analysis (Dr. Brett Kia-Keating)
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Statistical and Software Support for Faculty and Students   **January 2015 to April 2015**
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UNIVERSITY TEACHING EXPERIENCE

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Promoting the Social and Cognitive Competence of Children at School
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Teaching Assistant, Structural Equation Modeling   **Spring, 2016**
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    University of California, Santa Barbara
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Teaching Assistant, Research Methods   **Winter, 2016**
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Promoting the Social and Cognitive Competence of Children at School
Undergraduate Level Course
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Teaching Assistant, Topics in Applied Psychology   **Spring, 2015**
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Teaching Assistant, Theory and Practice of Psychotherapy   **Winter, 2015**
Undergraduate Level Course
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   <u>Professor:</u> Dr. Tania Israel

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Doctoral Psychology Intern   **August 2017 to July 2018**
Sarah A. Reed Children's Center (SARCC)
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   <u>Supervisors:</u> Dr. Eric Schwartz and Dr. Laura Amoscato

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Grandview Elementary School
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Graduate Student Clinician   **September 2013 to July 2016**
Psychology Assessment Center (PAC)
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Graduate Student Clinician   **November 2016 to July 2017**
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Undergraduate Supervisor, Teaching Associate and Assistant   **November 2012 to July 2017**
The Power of Play Program
    Isla Vista Elementary School and Ellwood Elementary School, Goleta, CA
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Mental Health Extern/Therapist   **September 2015 to June 2016**
Center for Therapeutic Education (CTE)
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Graduate Student Supervisor   **September 2015 to January 2016**
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Therapist/School Psychology Practicum Student   **August 2014 to June 2015**
Advanced Fieldwork
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    <u>Supervisors:</u> Dr. Becca Wrench and Dr. Erin Dowdy

School Psychology Intern   **April 2015 to May 2015**
Advanced Fieldwork
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Therapist/School Psychology Practicum Student   **September 2013 to June 2014**
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Basic Practicum Clinical Therapist   **January 2013 to June 2014**
Hosford Counseling & Psychological Services Clinic
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Practicum   **September 2012 to June 2013**
Classroom Aide/Behavioral Interventionist
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GUEST LECTURER

Advanced Fieldwork Practicum   **Fall, 2016**
Cognitive Behavior Therapy with Children and Adolescents
    University of California, Santa Barbara
    Professor: Dr. Erin Dowdy

Topics in Applied Psychology   **Spring, 2016**
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Research Methods   **Fall, 2015**
Survey Design Research
    University of California, Santa Barbara
    Professor: Dr. Matthew Quirk

Helping Relationships   **Winter, 2015**
Child Therapy
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    Professor: Dr. Tania Israel

Topics in Applied Psychology   **Fall, 2014**
Transactional-Ecological Approach
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Research Methods   **Summer, 2014**
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LEADERSHIP POSITIONS

Communications Liaison   **January 2016 to January 2017**
Student Affiliates of School Psychology, APA, Division 16

Student Leader   **September 2014 to June 2015**
National Association of School Psychologists (NASP)

Student Representative to Faculty   **September 2014 to June 2015**
Counseling, Clinical, and School Psychology Program
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TRAININGS AND CERTIFICATIONS

Cognitive Behavioral Therapy 101 & 102 (2-day training)	2014
Certification in Trauma Focused Cognitive Behavioral therapy (TF-CBT)	2014
Certification in Level 1 Training: Pivotal Response Treatment	2014
Certification in Psychoeducation Evaluation via CHC Cross-Battery Assessment	2013
Workshop on Cross Battery Assessment for English Language Learners	2013
A Solution Focused Approach to Counseling and Mental Health Interventions	2013

| HIPPA Training | 2011 |
| CBEST Certification | 2011 |

GRANTS AND AWARDS

Counseling, Clinical & School Psychology Travel Grant	2013 to 2016
Graduate School of Education Continuing Student Block Grant	2016 to 2017
Doctoral Student Travel Grant	2015
Pre-Doctoral Student Travel Grant	2014
Graduate School of Education Continuing Student Block Grant	2012 to 2013

PROFESSIONAL AFFILIATIONS

American Psychological Association	2012 to Present
National Association of School Psychologists	2012 to Present
International School Psychology Association	2014 to Present
California Association of School Psychologists	2011 to 2014

LANGUAGES

French and German

ABSTRACT

Understanding Relational and Physical Bullying Profiles:

The Importance of School Climate and Social Status

by

Cecile Binmoeller

Cross-national studies consistently reveal that bullying is a pervasive problem in schools and associated with a multitude of deleterious outcomes. The present dissertation conducted two studies to further provide insight into this complex phenomenon and facilitate the development of effective bullying prevention programs. Youth involved in bullying have historically been assigned to fixed bully participant roles (i.e., bully, victim, defender, and bystander) using classification systems based on relatively arbitrary cut off scores. Latent class analysis (LCA) was utilize in the first study to empirically identify bully participant role profiles in seventh and eighth grade based on assuming multiple bully participant roles at varying degrees. Four separate LCA models were run, two relational bullying LCAs and two physical bullying LCAs split by gender. Among female students, a four-class model emerged for both the relational and physical LCAs. Regarding males, a three-class model emerged for both the relational and physical LCAs. All four LCAs yielded a *High Involvement* class and a *Low Involvement* class. Concerning females, there was a consistent third class, called *Defender*, in both the relational and physical LCAs. However, the fourth class in the females' relational LCA was called *Victim Defender* while in the

physical LCA, the fourth class was call *Bystander*/*Defender*. Among males, the third class in the relational LCA was called *Defender*, but the third class in the physical LCA was called *Victim*. Overall, these findings build upon previous research on bully participant roles by demonstrating that students can assume multiple roles simultaneously and at varying degrees. In addition, this study revealed gender specific effects that varied according to whether the bullying was physical or relational.

To broaden our understanding of how socio-ecological factors influence bullying, a second study investigated how the bullying profiles identified in Study 1 relate to school climate factors and perceptions of social status. Specifically, three school climate factors were examined, including school-wide efforts to reduce bullying, student knowledge of how to address bullying, and direct communication between students and school staff about bullying. The two components of social status were self-reported levels of popularity and likability. Overall, across all four LCAs, self-perceived likability significantly predicted class membership. Self-perceived popularity significantly predicted class membership for male students and the physical LCA only. In terms of the school climate factors, all three components significantly predicted class membership among female students, for both physical and relational bullying. The school climate factors did not significantly predict group membership among male students for either physical or relational bullying. These findings suggest that the impact of socio-ecological factors on bullying is nuanced and complex, as it varied by gender and type of bullying. Understanding these nuances can help inform practitioners designing interventions that target the multifaceted needs of students involved in bullying.

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The Importance of School Climate and Social Status

I. Chapter 1: Literature Review

A. Introduction and Contribution to the Literature

Bullying among youth is recognized as a pervasive problem (Garandeau, Lee, & Salmivalli, 2014; Lucas-Molina, Williamson, Pulido, & Calderón, 2014) resulting in both immediate and long-term deleterious outcomes (Cortes & Kochenderfer-Ladd, 2014; Veenstra et al., 2005). Youth involved in bullying are at risk for various academic and social-emotional problems, including depression, truancy, and substance abuse (Veenstra et al., 2005). Furthermore, these challenges limit students' ability to engage and succeed in the pedagogical and social endeavors made available to them (Rodkin, Espelage, & Hanish, 2015). In light of this, there is a growing need for researchers to expand our understanding of bullying involvement and facilitate novel approaches to bullying prevention programs that effectively reduce incidence rates (Sentse, Kiuru, Veenstra, & Salmivalli, 2014). The current dissertation conducted two studies to further explore this complex phenomenon. The first sought to empirically identify bullying profiles based on assuming multiple bully participant roles (bully, victim, defending, and bystander), while the second examined how these bullying profiles relate to various socio-ecological factors.

Bullying is increasingly viewed as a group process in which various bullying-related behaviors emerge from peer group dynamics and various contextual factors (Espelage, Gutgsell, & Swearer, 2004; Gini, 2006; Lucas-Molina et al., 2014). Individuals are seen less frequently as falling into strict role categories (e.g., bullying, defending, bystanding, and victimization) and instead understood as being able to engage in various bullying related

behaviors at varying degrees, both within a single instance of bullying or over multiple instances (DeSmet et al., 2014; Gumbel, Zioni-Koren, & Bekerman, 2014). Despite this complexity, bullying researchers frequently assign students to fixed bullying participant roles by using classification systems that use arbitrary cut off scores, forcing students into single discrete groups that may not be meaningful or accurate (Nylund, Asparouhov, & Muthén, 2007a). This suggests new methods of examining participation in bullying roles need to align with the possibility that students engage in multiple roles at varying degrees (Goldweber, Waasdorp, & Bradshaw, 2013; Lovegrove, Henry, & Slater, 2012). Latent class analysis (LCA) provides a method to empirically identify patterns of behavior across multiple bully participant roles and further explore the complex nature of this phenomenon. Therefore, LCA was used in the first study to empirically identify bullying profiles based on assuming multiple bully participant roles (bully, victim, defending, and bystander).

Researchers increasingly use a social-ecological framework and conceptualize that bullying emerges as a result of a reciprocal interaction between an individual and multiple spheres of influence (such as peers, schools, families, and communities). As such, individual characteristics are no longer understood as being the sole predictor of bullying involvement. To broaden our understanding of how personal and environmental factors influence bullying, the second study investigated how bullying profiles relate to school climate factors and perceptions of social status. Specifically, three school climate factors were examined, including school-wide efforts to reduce bullying, student knowledge of how to address bullying, and direct communication between students and school staff about bullying. Furthermore, two components of social status were examined, self-reported levels of popularity and likability (frequently referred to as sociometric status).

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In efforts to impart youth with the skills they need to succeed, it is becoming increasingly common for schools to implement school-wide programs that foster a positive school climate (Cortes & Kochenderfer-Ladd, 2014; Strohmeier & Noam, 2012). These programs are designed to enhance a sense of safety and a supportive community by facilitating open communication and implementing interventions that help increase prosocial behaviors and reduce victimization (Swearer, Espelage, Vaillancourt & Hymel, 2010). Anti-bullying programs delineate steps schools can take when responding to bullying incidents and to prevent victimization. In addition, they frequently empower students themselves by providing them with the skills they need (referred in this study as "intervention competence") to appropriately respond to bullying when it occurs (Beale & Scott, 2001; Frey et al. 2005). Equally important is the opportunity students have to discuss bullying with adults so they can process peer relationship issues and seek help for themselves and others.

Few studies have examined how students' perceptions of these three school climate factors influence bullying, although they play a significant role in reducing victimization. This is concerning as one would assume bullying involvement is directly related to students' recognition of the ongoing efforts put forth by a school to tackle bullying. Furthermore, students' awareness of their own capacity to address bullying most likely impacts their readiness to defend victims of bullying and prevent altercations. Finally, the degree to which students are comfortable utilizing an open line of communication between them and school staff, likely reduces victimization by facilitating help seeking behaviors. Unfortunately, studies indicate only about half of regularly bullied youth talk to teachers about bullying (Fekkes et al. 2005), which can prevent adults from effectively helping. Ultimately, understanding how bullying relates to students' perceptions of these three school climate

factors, provides the opportunity to design interventions that target specific features and dynamics at school.

Several meta-analytic studies have suggested that school-wide anti-bullying interventions have limited success overall (Rigby, 2002). Results from a recent study indicated failure to reduce bullying is related to the highly coveted social rewards students gain by bullying others (Garandeau et al., 2014). Specifically, decreases in bullying behaviors were significantly smaller for popular bullies, compared to bullies low in popularity. Furthermore, a plethora of studies using peer nominations to identify social status (popularity and likability), reveal that although bullies tend to be disliked by others, they often rank highest in popularity, influence, and power (Lucas-Molina et al., 2014; Pouwels et al., 2015; Sentse et al., 2014). No study to date has examined how self-perceived likability and popularity relate to self-reports of bullying behaviors. This can expand our understanding of how bullying behaviors relate to social status and further assist in the design of interventions that target peer group dynamics and explore appropriate avenues to acquire social status.

In sum, the present dissertation conducted two studies, the first of which used LCA to empirically identify bullying profiles based on assuming multiple bully participant roles (bully, victim, defending, and bystander). This contrasts previous research that has historically assigned students to fixed bully participant roles using classification systems based on relatively arbitrary cut off scores. In the second study, this complex phenomenon was further explored by examining how these bullying profiles relate to three components of school climate (school effort, intervention competence, and comfort communicating) and two components of social status (popularity and likability). Understanding bullying in terms

of multivariate profiles, rather than single categories, and their relation to school climate factors and social status can offer insight on social dynamics at school and how best to develop bullying prevention programs.

B. Bullying

1. Definition and Outcomes

Scholars consistently recognize aggression as a critical phenomenon to study as it is one of the most stable human characteristics and associated with an array of deleterious outcomes (Dodge, Coie, & Lynam, 2006; Rodkin et al., 2015). Bullying is a subtype of aggressive behavior, distinguished by intent to harm another person, an imbalance of power, and a relationship that unfolds over time (Batsche, 2002; Bauman & Del Rio, 2006; Rodkin et al., 2015). The imbalance of power can result from differences in physical strength, social skills, and other resources (Scheithauer, Hayer, Petermann, & Jugert, 2006). Although accurate prevalence rates are difficult to attain, studies consistently show that bullying is a relatively common experience for children and adolescents (Wang, 2013). A national survey of 15,686 students in Grades six through ten reported 30% of students are regularly involved in bullying, either as bullies, victims, or both (Nansel et al., 2001; Northwest Regional Educational Laboratory, 2001).

Youth who are victimized at the hands of bullies are at risk of various psychosocial, physical, and academic problems (Cortes & Kochenderfer-Ladd, 2014). In terms of social-emotional outcomes, victims often experience low self-esteem, anxiety, loneliness, depression, avoidance, suicidal ideation, and limited social relationships (Cortes & Kochenderfer-Ladd, 2014; Fitzpatrick et al., 2010; Goldweber et al., 2013; Hanish & Guerra, 2000). Regarding physical health, victims report having higher rates of sleep

problems, headaches, stomach pains, and substance use (Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Goldweber, Waasdorp, & Dradshaw, 2013). Bullied youth also underperform academically, experience negative school attitudes, and have higher rates of truancy and dropout compared to youth who are not bullied (Cortes & Kochenderfer-Ladd, 2014). Contemporary scholars also note that victims are not the only ones prone to negative outcomes. Youth who bully others are at an increased risk of committing criminal offenses and becoming involved in future delinquency as well as alcohol and drug abuse (Rodkin et al., 2015; Veenstra et al., 2005). Academically, engaging in bullying behaviors has been associated with poor school adjustment, lower achievement rates, truancy, dropout, and receiving less support from teachers (Demaray & Malecki, 2003; Veenstra et al., 2005). Furthermore, bullying has been linked to various internalizing symptoms, such as depression, suicide, and anxiety (Fekkes et al., 2005; Olweus, 1993), and externalizing symptoms, including violence, aggression, conduct problems, hyperactivity, and hostility (Olweus, 1993; Veenstra et al., 2005). Given the number of documented deleterious outcomes associated with both bullying behaviors and victimization, it is imperative that scholars and school practitioners strive to understand this phenomenon and design interventions that can effectively reduce incidence rates.

Though the adverse consequences associated with bullying have been well documented, contemporary research has revealed surprising results in regards to the rewards linked to bullying (Rodkin et al., 2015). These findings suggest bullying is associated with a range of positive social outcomes, such as a greater number of friends, social power, and popularity (Farmer, Hall, Leung, Estell, & Brooks, 2011; Hawley, 2003; Rodkin, Farmer, Pearl, & Van Acker, 2000; Rodkin et al., 2015). In light of these findings, researchers often

conceptualize aggressive behavior as either adaptive or maladaptive (Rodkin et al., 2015). Those who point to the latter describe bullies as adaptive Machiavellians that are socially integrated amongst their peers (Ellis et al., 2012). Other scholars argue bullies are maladjusted, socially marginalized, and prone to academic, conduct, and mental health problems (Dodge, Coie, & Lynam, 2006). Guerra, Williams, and Sadek (2011) conducted a study in which they interviewed middle and high school students about the functioning of bullies. Results indicated about half perceived bullies to have high self-esteem, to be well integrated into the school, and to demonstrate a desire for social prowess. The other half reported bullies to be marginalized, have low self-esteem, and experience various emotional problems. These conflicting findings point to the fact that there is great variability in the social and emotional functioning of youth that engage in aggressive behaviors.

Recent bullying scholarship has investigated what might account for the heterogeneity in the experiences of bullies. An overview of these studies suggest this heterogeneity can be linked to the degree to which bullies are integrated and supported by their peers (Hawley, 2003). Bullies that are rejected by others often engage in reactive aggression and appear to have a deficit in developmental functioning, academic skills, and social competence, as well as have negative attitudes about themselves and others (Cook, Williams, Guerra, Kim, & Sadek, 2010; Rodkin et al., 2015). For these bullies, the aggressive behaviors occur in reaction to others, which are often misinterpreted as hostile. These youth are often described as having a lack of control and to behave in a manner that is impulsive (Farmer et al., 2010; Rodkin et al., 2015). Conversely, bullies who appear more integrated within their community have been found to use proactive aggression, instead of reactive aggression, and to display a variety of other prosocial characteristics, such as

cooperation, leadership, competence, and self-esteem (Pellegrini, 2010; Rodkin et al., 2015).

Proactive aggression is unprovoked and used for the purpose of achieving an ultimate goal, such as acquiring resources, creating boundaries, or changing another person's behavior or opinion. Youth who engage in proactive aggression may justify their behavior based on more socially appropriate goals, such as defending another person. After achieving their goal, bullies or aggressors that are well integrated often reconcile with a victim (Pellegrini, 2010; Rodkin et al., 2015). Hawley (2003) describes aggressive youth that are accepted by their peers as bistrategic controllers, as they often employ both prosocial and coercive strategies to acquire resources. The combination of using both prosocial and antisocial approaches (aggressive behaviors) has been found to result in increased social support, popularity, and influence (Hawley, Stump, & Ratliff, 2011). Using latent class analysis to examine bullying affords the opportunity to identify students that engage in both prosocial (defending) and antisocial (bullying) behaviors and link them to measures of social support.

2. Social-Ecological Perspective

Contemporary scholars increasingly use a social-ecological model to conceptualize how bullying related behaviors develop and are maintained (Espelage et al., 2004). Using this lens, bullying is understood as occurring within a larger social context and as a result of a reciprocal relationship between individual characteristics and environmental factors (Espelage et al., 2004; Gini, 2006; Lucas-Molina, et al., 2014). Youth that engage in bullying behaviors are both directly and indirectly influenced by multiple systems surrounding them. At close distance, children are influenced by families (i.e., relationships with parents, sibling, and other caregivers), schools (i.e., interactions with peers, teachers, and the school climate), neighborhoods, and other community establishments (i.e., churches

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and after school programs; Bronfenbrenner, 1979). Within the larger social context, several variables not in the immediate context of the child have an indirect impact (Bronfenbrenner, 1979), including cultural expectations, family social networks, government laws and reform, and social welfare services. In order to understand the variables that influence, sustain, or deter bullying behaviors from a holistic perspective, both individual characteristics (e.g., gender, cognitive factors, and skills; Doll & Swearer, 2006; Lucas-Molina et al., 2014), social group dynamics (Hawley, 2003; Pellegrini, 2010), and school climate factors (Kasen, Berenson, Cohen, & Johnson, 2004; Steffgen, Recchia, & Viechtbauer, 2013), must be taken into consideration.

3. Developmental Trajectory

Bullying has been identified as occurring as early as preschool and has been found to increase and peak in middle school (Neiman, Devoe, & Chandler, 2009; Otieno & Choong, 2010; Pellegrini & Bartini, 2001; Pellegrini & Long 2002; Williford et al, 2011). The transition to middle school, accompanied by a host of biological and social-ecological changes, appear to make adolescents especially vulnerable to bullying (Pellegrini & Long, 2002). Although students in middle school report the highest rates of bullying, anti-bullying programs have been found to be the least successful in middle school compared to elementary school (Ka'rna' et al., 2013; Sentse, Kiuru, Veenstra, & Salmivalli, 2014; Smith 2010). Recent research has also revealed that the forms in which children bully others becomes increasingly complex and subtle as they develop. Specifically, as youth develop social, verbal, and cognitive skills, they experiment with the use of social manipulation, whereas in early childhood, students are more likely to engage in physical bullying. In other words, as children develop from primary to middle school, physical forms of bullying

decrease and relational forms increase. Regarding the stability of bullying involvement, Scholte, Engels, Overbeek, de Kemp, and Haselager (2007) examined the stability of bullying related behaviors by collecting data on students in primary school and later in secondary school. They found almost half of all students continued to bully their peers at the age of 14, if they had already done so at the age of 11.

Examining the contextual and biological changes students experience in middle school can provide several possible explanations for increases in bullying behaviors during this time. The transition from elementary school to middle school involves a multitude of physical, social, emotional, and situational changes (Pellegrini & Bartini, 2001; Williford et al, 2011). Adolescent bodies mature rapidly, mainly due to hormonal changes, and they may develop increased interest in romantic partners (Pellegrini & Bartini, 2001; Williford et al, 2011). During the transition between elementary and middle school, students frequently move from a smaller and more supportive environment, to a larger unknown one (Williford et al, 2011). Adolescents have been found to increase the number of their peer interactions and level of experimentation in various activities, including substance use, aggression, delinquency, and other antisocial conduct (Johnston, O'Malley, Bachman, & Schulenberg, 2010; Williford et al, 2011). Social interactions also change, as peers become a stronger source of influence and social niches are increasingly important. Scholars examining social status and human development have noted that adolescents prioritize popularity, dominance, and being able to impress peers and gain their acceptance (Farmer, Hall, Leung, Estell, & Brooks, 2011; Hawley, 2003; Pellegrini & Long, 2002; Rodkin, Farmer, Pearl, & Van Acker, 2000; Rodkin et al., 2015; Williford et al, 2011). This heightened concern for social status, power, and peer approval is frequently provided as an explanation for the increases in

bullying behaviors among adolescents in middle school (Farmer, Hall, Leung, Estell, & Brooks, 2011; Hawley, 2003; Pellegrini & Long, 2002; Rodkin, et al., 2000; Rodkin et al., 2015; Williford et al, 2011).

4. Bullying Subtypes

Results from cross-national studies indicate that aggression and bullying can manifest in several distinct forms, including physical, verbal, relational, and, recently, cyber bullying (Bauman & Del Rio, 2006; Bradshaw, Waasdorp, & Johnson, 2015; Gini, 2006; Meysamie, Ghalehtaki, Ghazanfari, Daneshvar-Fard, & Mohammadi, 2013; Patton, Hong, Williams, & Allen-Meares, 2013; Wang, Iannotti, & Nansel, 2009). Physical bullying involves direct physical contact such as hitting, kicking, pushing, and taking/breaking personal belongings. Historically, research on aggression has focused primarily on this subtype (Murray-Close, Nelson, Ostrov, Cases, & Crick, 2016; Veestra et al., 2005). It is the most easily observable type of bullying and, as a result, receives the most attention from teachers and schools (Bauman & Del Rio, 2006; Murray-Close at al., 2016; Scheithauer et al., 2006). Verbal bullying is also considered a direct or overt form of bullying and includes verbal attacks such as name-calling, threatening, and teasing. Relational bullying includes acts that are intended to hurt others or damage relationships without making physical contact (Murray-Close et al., 2016; Scheithauer et al., 2006). Although relational aggression is typically indirect, it can also manifest in a direct manner as well (Murray-Close et al., 2016). However, many researchers use the term relational bullying and indirect bullying interchangeably. In its indirect form, relational bullying includes gossiping, telling lies about someone, spreading rumors, and isolating/ignoring another person. Direct relational bullying involves overtly excluding or isolating another person, for example by directly telling

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another person they are not welcome at a party. Recently, studies have begun to show an increased interest in the development of relational bullying (Patton, Hong, Williams, & Allen-Meares, 2013). Although these subtypes of bullying differ in terms of form, outcomes, and development, few researchers explicitly make these distinctions when collecting data or providing results (Rodkin et al, 2015; Scheithauer et al., 2006).

In addition to taking on different forms, these subtypes of bullying behaviors (physical, verbal, and relational) typically follow different developmental paths and result in distinct outcomes (Murray-Close et al., 2016; Ojanen & Findley-Van Nostrand, 2014). Regarding different developmental paths, physical bullying appears to decrease from elementary to middle and high school, while relational bullying increases, due to cognitive, social, and biological maturation (Bauman & Del Rio, 2006; Murray-Close et al., 2016). Because younger students have relatively limited social and cognitive abilities compared to older students, they are more apt to display physical bullying behaviors rather than verbal and relational bullying behaviors (Bjorkqvist, Björkqvist, Österman, & Kaukiainen, 1992). As adolescents develop increased interests in social interactions and the cognitive abilities to navigate them, they are more likely to engage in relational bullying (Ojanen & Findley-Van Nostrand, 2014). Regarding outcomes, youth that are victims of relational bullying have been found to experience greater emotional distress (Bauman & Del Rio, 2006; Hawker, 1998), psychological maladjustment, and depression compared to physical bullying victimization (Crick & Bigbee, 1998; Crick, Grotpeter & Bigbee, 2002; Olweus, 1993). Moreover, victims have identified relational bullying as the most damaging (Sharp, 1995). Unfortunately, relational bullying often fails to raise the concern of teachers who

misinterpret this behavior as a normal part of development (Bauman & Del Rio, 2006; Yoneyama & Naito 2003).

5. Bully Participant Roles

Recognizing the larger social framework that influence behaviors, bullying is increasingly viewed as a group process in which various bullying behaviors emerge out of peer group dynamics and contextual factors (Espelage, Gutgsell, & Swearer, 2004; Gin, 2006; Lucas-Molina, et al., 2014; Rodkin et al., 2015; Sentse, et al., 2014). This suggests the act of bullying and being victimized rarely includes only a perpetrator and a victim, and instead involves other peers that have a significant influence on how bullying unfolds. For example, a person may defend a victim by telling a bully to stop or by standing in front of a victim (Camodeca, Caravita, & Coppola, 2015; Pouwels, Lansu, & Cillessen, 2015). In this sense, bullying is understood as a dynamic and relational phenomenon that is embedded within a larger social network of peers (Rodkin et al., 2015). Using this framework, Salmivalli, Lagerspetz, Björkqvist, Österman, and Kaukiainen (1996) developed the participant role approach, which organizes individuals involved in the bullying process into six distinct groups: Victim, Bully, Reinforcer, Assistant, Defender, and Outsider/Bystander. Each bully participant role has been identified based on participants' positions in relation to the bullying behavior. Defenders provide assistance to victims of verbal, physical, and/or relational bullying, while outsiders/bystanders remain as observers during bullying incidents. Finally, reinforcers encourage the bully while the role of assistant actually helps bullies harm others.

Literature examining the stability and fluidity of these subgroups has yielded conflicting results. On the one hand, various researchers have found these subgroups to be

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definable and stable for a majority of children at schools (Goldweber et al. 2013; Salmivalli, 2010), while other scholars have found students are able to embody multiple roles, often switching between roles within a single bullying episode or across multiple episodes (Dempsey, Fireman, & Wang, 2006; Gumpel et al. 2014; Rodkin & Hodges, 2003). Additionally, some roles have been found to be easily distinguishable while others less clearly recognizable (Rodkin & Hodges, 2003).

Gumpel et al. (2014) conducted an ethnographic study investigating bully participant roles with students in Grade 10 over one academic year, finding that students often switched between roles within or between bullying episodes. Specifically, youth transitioned between the roles of defenders, bystanders, assistants to bullies, and reinforcers of bullies. These transitions were dependent on the perceptions of other students, the influence of teachers and peers, and finally environmental contexts. In structured interviews, students reported switching between defender and bystander depending on whether the victim appeared "innocent" or "non-innocent" (p. 224). Teachers were found to influence involvement in these roles by suppressing, encouraging, or remaining indifferent to various behaviors. Additionally, teacher classroom management style influenced involvement in these roles by creating social structure, attitudes, and expectations. Location changes, such as moving from a classroom to the playground, and peer influences were found to encourage or impede involvement in bully participant roles.

These findings further confirm that involvement in bullying, via partaking in various participant roles, is a dynamic and complex group process. Therefore, it may be a mischaracterization to categorize youth who engage in bullying behaviors into only one of four groups (i.e., bully, victim, defender, bystander; DeSmet et al., 2014). In other words,

given the importance of contextual and personal factors that influence participation in various roles, researchers should avoid assigning fixed roles to youth and examine the potential for students to assume multiple roles. Furthermore, detecting the roles students might take on during bullying is essential for understanding how the group process unfolds and for designing school-based interventions.

II. Chapter 2: Study 1
A. Introduction

Bullying is recognized as a salient problem worldwide (Garandeau, Lee, & Salmivalli, 2014; Lucas-Molina, Williamson, Pulido, & Calderón, 2014) resulting in immediate and long-term deleterious outcomes (Cortes & Kochenderfer-Ladd, 2014; Veenstra et al., 2005). It is a subtype of aggressive behavior characterized by an imbalance of power and recurring deliberate attempts to harm another person (Batsche, 2002; Bauman & Del Rio, 2006; Rodkin et al., 2015). Because aggression can manifest in various forms, researchers have identified several subtypes of bullying, which include physical, verbal, and relational bullying (Bauman & Del Rio, 2006). Both physical and verbal bullying are considered direct forms of bullying because they involve physical contact or direct verbal attacks, while relational bullying is typically referred to as indirect.

1. Bully Participant Roles

Scholars increasingly view bullying as unfolding within a group process in which various bullying behaviors emerge from peer group dynamics and contextual factors (Espelage, Gutgsell, & Swearer, 2004; Gin, 2006; Lucas-Molina et al., 2014; Rodkin et al., 2015; Sentse et al., 2014). Youth involved in bullying have historically been assigned a bully participant role based on assuming target behaviors within these peer group dynamics. Specifically, researchers have grouped individuals into distinct bully participant roles that are differentiated by the participants' positions in relation to the bullying behavior (Salmivalli, Lagerspetz, Björkqvist, Österman & Kaukiainen 1996). Four primary roles have consistently been identified, which include the roles of bully, victim, defender (one who assists the victim), and bystander (one who remains an observer during bullying incidents without direct involvement; Salmivalli et al., 1996).

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Literature examining the stability and fluidity of bully participant roles has yielded conflicting results. On the one hand, various scholars have found these roles to be definable and stable (Goldweber et al. 2013; Salmivalli, 2010), while others have found students are able to embody multiple roles, often switching between roles within a single bullying episode or across multiple episodes (Dempsey, Fireman, & Wang, 2006; Gumpel et al. 2014; Rodkin & Hodges, 2003). These findings suggest it may be a mischaracterization to assign youth to fixed roles and that future research should use methods of classification that allow for students to assume multiple roles.

Although a large body of literature has explored bully participant roles, very little research has sought to link bully participant roles to the different subtypes of bullying. In other words, it is rare that studies distinguish between verbal, physical, and relational forms of bully participant roles. More specifically, although researchers have applied bullying subtypes to the roles of bully and victim (therefore differentiating between youth that are victims of physical, verbal, or relational aggression), no study to date has applied the bullying subtypes to the roles of defender and bystander. Yet, it is reasonable to expect that the decision regarding whether to assume the role of defender may depend on the type of bullying witnessed. Similarly, whether an adolescent decides to remain a bystander might depend on whether they are witnessing verbal, physical, or relational bullying behavior. Given this, the present study conducted two separate analyses in regards to physical and relational bullying in order to distinguish how they apply to all four bully participant roles.

2. The Influence of Gender

Bullying Subtypes and Gender. Several studies have outlined gender differences in the occurrence of physical versus relational bullying. Overall, findings consistently suggest

boys are more often involved in direct physical forms of bullying, whereas girls are more likely to experience indirect relational forms of bullying (Fekkes et al., 2005; Gini, 2006; Murray-Close et al., 2016; Scheithauer et al., 2006; Veenstra et al., 2005), especially spreading rumors and ignoring another student (Fekkes et al., 2005). With regard to female students in middle school, several studies have found that girls bully more frequently in an indirect manner (Murray-Close et al., 2016; Whitney & Smith, 1993) compared to direct forms of bullying. Looking at primary school children, Wolke, Woods, Bloomfield, and Karstadt (2000) found that girls reported being victims of relational bullying more often compared to boys. In light of these findings, the current study ran two separate analyses for female and male students in order to examine whether involvement in physical versus relational bullying varies based on gender.

Bully participant roles and gender. Extensive literature has examined the relations between bully participant roles and gender (Crick, 1997; Dempsey et al., 2006; Lucas-Molina et al., 2014; Otieno & Choongo, 2010; Scheithauer et al., 2007). As previously mentioned, it is noteworthy that the majority of these studies fail to separate verbal, physical, and relational bullying in order to identify differences based on bullying subtypes (Rodkin et al., 2015; Scheithauer et al., 2007). Keeping this in mind, substantial research suggests boys are more likely to take on the roles of bully (Camodeca et al., 2015; Fekkes et al., 2005; Goossens, Olthof, & Dekker, 2006; Sentse et al. 2014; Veenstra et al., 2005), bully assistant (Lucas-Molina et al., 2014), bully reinforcer (Lucas-Molina et al., 2014), and bully/victim (Veenstra et al., 2005), while girls are more likely to take on the roles of defender and outsider/bystander (Camodeca et al., 2015; Goossens et al., 2006; Lucas-Molina et al., 2014; Scheithauer et al., 2007).

Regarding victimization, distinctions between girls and boys are not as pronounced and inconsistent (Veenstra, 2005). These inconsistencies may be due to the different methods of assigning roles and defining bullying, not distinguishing between different types of bullying (Camodeca et al., 2015), and participants being in different developmental stages (Goossens et al., 2006; Lucas-Molina, 2014). Both Belacchi and Farina (2010) and Monks, Smith, and Swettenham (2003) examined aggressive behaviors in preschoolers. When using teacher reports of bullying, Belacchi and Farina (2010) found that girls were more likely to take on the role of defender. The same results were found by Monks et al. (2003) using peer nominations but not when self-reports were used. Given the trends that have been identified with regard to bullying subtypes (i.e., physical, relational, and verbal; Murray-Close et al., 2016), it is likely that boys would physically defend the victim more frequently using direct contact, and that girls would indirectly defend more often using verbal skills (Camodeca et al., 2015). Considering this, the current study ran two separate analyses for female and male students in an attempt to distinguish how bully participant role patterns relate to gender.

3. Methods of Classification

Classification schemes have historically been used by researchers to generate groups that are based on having similar characteristics (Gottlieb, 1978). In regards to bullying, a classification scheme might involve a collection of behaviors (such as intentionally hitting the same peer on three sperate occasions during the past week), which is then used to assign participants to a specific bully participant role. Since the methods of classification used delineate how participants are grouped, they have a direct impact on the prevalence of bullying, how it is conceptualized, and ultimately the interventions designed to prevent it.

Cut-off scores. Scholars have traditionally used classification schemes that apply cut-off scores to variables when categorizing individuals into different bully participant roles (Solberg & Olweus, 2003). Specifically, students are placed into groups based on reporting the highest involvement in one or two of these groups (e.g., a participant whose score falls in the top ten percent of a variable measuring intentional physical aggression towards a peer would be categorized as a bully). Several limitations occur when using this method. First, groups are not empirically identified, as the cut-off scores used to identify groups tend to be arbitrary. This can force participants into single discrete groups, which may not be meaningful or accurate. Moreover, this method fails to identify groups that differ in their quantitative level and/or qualitative shape (Williford, Brisson, Bender, Jenson, & Forrest-Bank, 2011). For example, students may indicate similar patterns of high, medium, and low involvement across several, or all, bully participant roles. By creating groupings based on meeting the criteria of one variable (e.g., depicting characteristics of a bully, victim, defender, or bystander), the use of cut-off scores as a classification system can lead to inconsistent prevalence estimates of bully participant roles (Nylund, Bellmore, Nishina, & Graham, 2007b; Williford et al., 2011).

Latent class analysis. Instead of using predetermined cutoff scores, latent class analysis (LCA) is a statistical technique that can be used to empirically identify latent groups, called latent classes, of individuals based on observed response patterns (Collins & Lanza, 2003). This approach has the potential to examine whether students assume multiple bully participant roles simultaneously depending on the number of roles included in the analysis, which reliance on cut-scores may mask. Additionally, since LCA identifies classes based on observed response patterns rather than arbitrary cutoff scores, LCA avoids the

pitfalls noted above. From a theoretical standpoint, LCA is appropriate because it identifies qualitatively discrete groups, which is consistent with the discrete bully participant roles identified in the literature. Finally, because LCA is a model-based approach, it uses fit indices that can help researchers identify the number of classes that fit the data best. Model-based approaches also allow for the model to be replicated in independent samples, which can potentially clarify some of the conflicting findings in the literature. Thus, LCA lends itself well to identifying bully participant role profiles and it overcomes the methodological limitations of traditional classification systems. In order to empirically identify patterns of behavior across all bully participant roles, and further explore the complex nature of bully participant roles, LCA was utilized in this study.

Several studies have used LCA to identify subgroups of bullying involvement among the participant roles of victim, aggressor, or both (Goldweber, Waasdorp, & Bradshaw; 2013; Lovegrove, Henry, & Slater 2012; Williford et al., 2011). However, no published study to date has used LCA to examine patterns across four participant roles: bully, victim, defender, and bystander. Williford et al. (2011) conducted a longitudinal study to examine the stability of aggression and victimization from elementary to middle school. Self-reported data was collected in fourth, fifth, and sixth grades. Latent transition analysis was used to examine patterns of aggressive behavior and victimization in each grade, and then to assess the stability of latent class membership over time. In fourth grade, four latent classes were identified consisting of aggressor, victim, aggressor-victim, and uninvolved. In fifth and sixth grade, the aggressor latent class disappeared. Williford et al. (2011) did not find stability in the role of victim and aggressor over time. Instead aggression and victimization occurred in "episodes or spells" (Williford et al., 2011, p. 652).

Goldeweber et al. (2013) used LCA to examine patterns of bullying involvement across different types of victimization and aggression. Self-reports of verbal, physical, and relational victimization and aggression were collected from sixth, seventh, and eighth graders in 20 schools, $n = 10,254$. Results indicated three subgroups: Low Involvement, Victim, and Bully-Victim. Giang and Graham (2008) examined the role of victim and aggressor and found three subgroups: Highly-Victimized, Aggressive-Victims, and Highly-Aggressive, Aggressive-Victims. Focusing solely on victimization, Nylund et al. (2007b) used LCA to examine peer victimization across three years of middle school, sixth, seventh, and eighth grade. Results yielded three victim classes based on degree of victimization, including Victimized, Sometimes victimized, and Non-Victimized. Thus, LCA has proven to be a useful tool to study patterns in bully participant role involvement, yet no study to date has used LCA to examine the degree to which youth participate in four bully participant roles (bully, victim, defender, and bystander).

B. The Current Study

The current study investigated whether there are heterogeneous profiles of middle school students based on variables measuring relational and physical bully participant roles. Understanding bullying in terms of profiles, rather than single categories may yield a new perspective on social dynamics at school and provide insight on how best to develop effective bullying prevention programs. Four LCAs were run to identify profiles of bully participant roles that distinguish type of bullying (relational versus physical) and gender (male versus female). Specifically, two LCAs were conducted with regard to relational bullying, one for male students and one for female students. Two additional LCAs were run with respect to physical bullying, which were also separated by gender. The LCAs were

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parceled out in this manner to allow for the possibility of bullying profiles to vary based on gender and bullying subtype. This plan was preferred over using gender as a covariate because a covariate approach would have assumed that the same profiles apply to both genders. Furthermore, the current approach provides the possibility of identifying interventions that are gender-specific. The following four research questions and corresponding hypotheses were proposed.

1. Questions and Hypotheses

Study 1. Latent Class Analyses

   Relational Bullying

      Question one. *Using the four bully participant roles (bully, victim, defender, bystander), can <u>male students</u> be classified into meaningful heterogeneous groups with respect to relational bullying?*

         Hypothesis one. Although this process is exploratory, it is predicted that multiple substantively meaningful groups with different patterns of endorsement will emerge with respect to relational bullying among male students.

      Question two. *Using the four bully participant roles (bully, victim, defender, bystander), can <u>female students</u> be classified into meaningful heterogeneous groups with respect to relational bullying?*

         Hypothesis two. Although this process is exploratory, it is predicted that multiple substantively meaningful groups with different patterns of endorsement will emerge with respect to relational bullying among female students.

   Physical Bullying

      Question three. *Using the four bully participant roles (bully, victim, defender, bystander), can <u>male students</u> be classified into meaningful heterogeneous groups related to physical bullying?*

         Hypothesis three. Although this process is exploratory, it is predicted that multiple substantively meaningful groups with different patterns of

endorsement will emerge that relate to physical bullying among male students.

Question four. *Using the four bully participant roles (bully, victim, defender, bystander), can <u>female students</u> be classified into meaningful heterogeneous groups related to physical bullying?*

Hypothesis four. Although this process is exploratory, it is predicted that multiple substantively meaningful groups with different patterns of endorsement will emerge that relate to physical bullying among female students.

C. Methods

1. Participants

The participants included were selected from a middle school in southern California. No student was excluded on the basis of disability or special education eligibility. The final sample, $N = 572$, included 46% ($n = 265$) male students and 54% ($n = 307$) female students, as well as 50% ($n = 288$) seventh graders and 50% ($n = 284$) eighth graders. With regard to ethnicity, the final sample included 41% Latino/a ($n = 236$), 42% Caucasian ($n = 241$), 7% Asian ($n = 38$), 1% African American ($n = 6$), 1% Native American ($n = 4$), 7% Multi-Racial ($n = 41$), .5% Middle Eastern ($n = 3$), and .2% Native Hawaiian ($n = 1$).

2. Measures

Bully Participant Role Survey. The Bully Participant Role Survey (BPRS; Summers & Demaray, 2009) was developed to differentiate bullying participant roles. The scale consists of 48 likert-scale items and is intended for children in fifth to eighth grade. It measures students' perceptions of bullying in their school and assesses four different bullying participant roles: bully, victim, defender of the victim, and outsider (bystander). The outsider subscale contains items assessing the frequency with which a student remains

uninvolved in bullying situations (e.g., "I ignored it when someone was calling another student bad names"). Students are asked to indicate how frequently they engaged in relevant activities in the past 30 days using a five-point scale (1 = *never,* 2 = *1-2 times,* 3 = *3-4 times,* 4 = *5-6 times, and* 5 = *7 or more times*). Examination of the psychometric properties of the BPRS indicated accuracy in identifying various participant roles in bullying situations (Summers & Demaray, 2009). The scale has been shown to have strong internal consistency (Cronbach's alpha = .93) and validity (Summers & Demaray, 2009). Factor analytic procedures confirmed a four factor model. That is, items that were theorized to reflect each of the four bullying participant roles did so appropriately. Items loaded onto one of the following factors: (1) bully, (2) victim, (3) defender, and (4) bystander. In order to categorize students into bully participant roles, the BPRS uses the traditional classification system of applying cut-off scores to observed variables. Students who exceed a specified cut-off score are classified as belonging to a particular bully participant role. Due to the numerous aforementioned drawbacks associated with this method, LCA was used in this study instead of the cut-off scores used in the BPRS.

For the purposes of this study, some of the 48 items were excluded for substantive reasons. Items were reviewed for content and those that did not fit the criteria in describing behaviors related to either relational or physical bully participant roles were excluded because these were the two roles of interest in this study. For example, some items described verbal aggression/bullying (e.g., "I made fun of another student" or "I called another student bad names") and these items were excluded. A total of 14 BPRS items that relate to relational bullying participant roles were used (see Table 1). The items describe five relationally aggressive behaviors, four experiences of relational victimization, three

defending behaviors in response to relational aggression, and two bystander behaviors in response to relational aggression. The LCA using these items will subsequently be referred to as the relational LCA. A total of 14 BPRS items were also used that relate to physical bullying (see Table 2). The items describe four physically aggressive behaviors, four experiences of physical victimization, two defending behaviors in response to physical aggression, and four bystander behaviors in response to physical aggression. The LCA using these items will subsequently be referred to as the physical LCA.

Following the reduction of items, the remaining items were then dichotomized. Specifically, the response "Never" was coded as zero, and all other responses indicating that behaviors occurred were coded as one. Therefore, any instance of involvement in bullying behavior within the previous 30-day time span was considered an indication of participating in the respective role. For example, any endorsement (1 to 7+ times) of an item related to the participant role of bully was considered an indicator of exhibiting bullying behavior within the past 30 days. These binary variables were used as indicators when running the four LCAs. The key reason behind this re-coding was the 30-day time span. Given that the scale was measuring bullying in the past 30 days, it was decided the response options did not adequately reflect severity of bullying (i.e., substantively meaningful differences were not evident between students who participated in these behaviors 1-2 times in the last month, versus 3 to 4 times).

3. Procedures

Students attending a middle school in southern California were asked to complete the BPRS survey as homework. Teachers were briefly trained through a one-hour faculty meeting before assigning the survey to their students, allowing one week to complete it.

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Students were informed that the survey was anonymous to assure the confidentiality of their responses. They were allowed to complete the survey at home or at school, during unstructured time, and received a certificate upon completion. Students were required to complete all items to receive the certificate. The data completed through Survey Monkey was exported into SPSS version 24 and cleaned for analysis.

4. Data Analysis Plan

Latent Class Analysis. Four separate series of LCAs were run using M*plus* 7.3 (Muthén & Muthén, 1998-2013), two relational LCAs and two physical LCAs split by gender, in order to empirically identify latent classes based on the bullying participant roles. A conceptual diagram that applies to all four LCAs is depicted in Figure 1. For each series of LCAs, a one-class model was run first. Further models were then conducted with one additional class added to each subsequent model (e.g., two-class model, three-class model), until adding classes achieved little and/or no improvements. Fit information was examined to detect improvements in model fit and to aid in selecting the best fitting LCA model.

Several fit indices were utilized because there is not a single statistical criterion that identifies the best fitting model (Nylund, Asparouhov, & Muthén, 2007a). The fit indices that were examined include the Bayesian Information Criterion (BIC), which has been shown to most often identify the best fitting model (Nylund et al., 2007a), and the sample size Adjusted BIC (ABIC). Smaller values on these fit indices indicate a preferred model. Likelihood-based tests were also used to compare models, including the bootstrap likelihood ratio test (BLRT) and the Lo-Mendell-Rubin (LMR) test. Both of these tests provide a *p*-value that indicates whether adding an additional class results in a significantly better model than the previous model with one less class. A non-significant *p*-value indicates adding an

additional class did not significantly improve the model. Therefore, the preferred model, based on this criterion, is the previous model with one less class.

In addition to fit indices, substantive interpretation was considered when selecting the final number of classes for each model. Item-probability plots were examined to identify the substantive interpretation of the classes and subsequently provide labels for them. Entropy measures how well participants are grouped into the latent classes and were examined for the final preferred model only as this is not considered a fit statistic. Entropy values range between zero and one, with higher values indicating better classification of individuals into classes and classes that are more clearly delineated from one another (Nylund et al., 2007b). Once the best fitting unconditional model was identified, class-specific response patterns were explored in order to label the classes.

D. Results

1. Descriptive Statistics

The means and standard deviations of the BPRS items are presented in Table 1 (relational) and Table 2 (physical). Overall, the means of all relational BPRS items were higher than the physical BPRS items for both genders. This suggests that bully participant roles linked to relational bullying occurred more frequently in this sample compared to those associated with physical bullying. Across gender and bullying types (physical and relational), the indicators measuring the role of bully had the lowest means, with 7% to 45% of students endorsing them. Conversely, for both genders and types of bullying, the defender items had the highest means, with 36% to 70% of students supporting them. With respect to physical bully participant roles, the item, "I have damaged or broken something that was another student's," produced the lowest mean score across both genders, while the item, "I

defended someone who was being pushed, punched, or slapped," yielded the highest mean score. For the relational bully participant role items, "I have told lies about another student," produced the lowest mean score and the item, "I tried to include someone if they were being purposely left out," returned the highest mean score, for both boys and girls.

In terms of gender, overall, boys yielded higher means across all the physical BPRS items, while female students produced higher means on all the relational BPRS items, except for the role of bully. Examining the victim, defender, and bystander items, male students endorsed these three roles at a higher rate when they were linked to physical bullying, while female students endorsed these three roles at a higher rate when they were associated with relational bullying. Regarding the role of bully, male students were observed to have a higher mean score on all the physical bullying items and on three of the five relational bullying items. Therefore, boys in this sample reported higher involvement in the role of bully, irrespective of type of bullying.

2. Latent Class Enumeration

Four separate series of LCA models were run. Specifically, two LCA models were conducted using the relational BPRS items (one for male students and one for female students), and two LCA models were run using the physical BPRS items (again, a separate LCA for each gender). For each of the four series of LCA models, a one-class model was first conducted, and then adding one additional class in each subsequent iteration. A total of six classes were examined for each series of LCA models. Fit information for each LCA series is presented in Table 3 (relational) and Table 4 (physical), which provide the log-likelihood, BIC, ABIC, and p-values for the BLRT and LMR.

Relational LCA models. The majority of the fit indices supported a three-class model when looking at male students' responses to the relational bully participant roles items (see Table 3). The BIC reached a minimum value at the three-class model, while the ABIC did not reach a minimum value. The first non-significant *p*-value of the LMR was found at the four-class model, providing further evidence for a three-class model. The first non-significant *p*-value of the BLRT was found at the six-class model, indicating that adding a sixth class did not provide a significant improvement over the five-class model. However, because both the BIC value and *p*-value of the LMR were indicative of a three-class model, it was chosen as the preferred model. Although it is not generally considered a fit statistic, entropy was also examined. The entropy for the three-class model was .80, suggesting the classes are clearly delineated and that participants are grouped into these classes well.

Looking at female students' responses on the relational BPRS items (see Table 3), the BIC reached a minimum value at the four-class model. The ABIC did not reach a minimum value and the first non-significant *p*-value of the LMR was found at the four-class model, which offered evidence for a three-class model. All the BLRT values were significant, all *p*s < .001, and therefore not used in the decision to find a preferred model.

Since fit indices did not point to one preferred relational LCA model with female students, theoretical foundations and substantive interpretation of item probability plots were considered to help identify the best fitting number of classes. There was one primary difference between the three- and four-class models. A class in the three-class model consisted of people who appeared to be moderately involved in the role of victim and defender. In the four-class model, this class was divided into two classes, with one endorsing high levels of victimization and defending, and the other endorsing high levels of only

defending behaviors. It was substantively meaningful to separate one group that only has

moderate endorsement of victimization and defending into two groups, specifically, one

with high defending behaviors only, and another with high defending and victimization. The

distinction between a group that only endorses the role of defender and another group that

engaged in two roles (defender and victim), is an important one. Therefore, these two classes

appeared to better explain the variability in participants' responses than a single class.

Furthermore, the BIC is considered the most trusted fit index (Nylund et al., 2007), which

supported a four-class model. Therefore, the four-class model was chosen as the preferred

model. The entropy for the four-class model was .82, which is generally considered

acceptable.

Physical LCA models. The majority of the fit indices supported a three-class model

when looking at male students' responses to the physical bully participant roles items (see

Table 4). The BIC reached a minimum value at the three-class model and the ABIC did not

reach a minimum value. The first non-significant *p*-value of the LMR was found at the four-

class model, while the first non-significant *p*-value of the BLRT was found at the six-class

model. Again, because both the BIC value and *p*-value of the LMR yielded evidence for a

three-class model, it was chosen as the preferred model. The entropy for the three-class

model was .89, suggesting the classes are clearly delineated and that participants are

grouped well.

Regarding female students and the physical BPRS items, the BIC reached a

minimum value at the four-class model, suggesting a four-class model is a better fit to the

data compared to models with different numbers of classes (see Table 4). The ABIC did not

reach a minimum value and the first non-significant *p*-value of the LMR was found at the

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four-class model, which offered evidence for a three-class model. All the BLRT values were significant (all ps < .001) and therefore not used in the decision to find a preferred model.

Because fit indices did not point to one preferred physical LCA model with female students, substantive interpretation of item probability plots was again utilized to help identify the preferred number of classes. Looking at the three-class model, a class emerged that moderately endorsed defending behaviors. This class consisted of a sizable portion of the female sample, 35.83%. In the four-class model, this class was divided into two groups, with one endorsing moderate to high levels of victimization and defending, and the other endorsing high levels of bystanding and moderate defending. It was substantively meaningful to separate one group that only has moderate endorsement of defending behaviors into two groups, especially because it was a substantial portion of the sample. Furthermore, it is important to distinguish between a group that endorses the role of victim and defender, and a group that endorses the role of bystander and defender. In particular, it is interesting that the group that reported victimization had a higher level of endorsement for defending, compared to the group that reported bystanding behaviors. Therefore, these two classes yielded a more promising explanation of the variability in participants' responses. Therefore, based on support from the BIC, and substantive interpretation, the four-class model was preferred. In addition, the entropy for the four-class model was .81.

3. Naming the Latent Classes

Item-probability plots were used to describe and label the classes. These plots present the probability that a student from a given class will endorse a particular item. Figures 2, 3, 4, and 5 depict the item-probability plots with the BPRS items along the x-axis, and the probability of endorsing the items along the y-axis.

Relational LCA models. Regarding the relational LCAs, the first five items are

associated with relational aggression, representing the participant role of bully. The next

four are related to victimization of relational aggression (victim) and the subsequent three

involve defending behaviors in response to relational victimization (defender). Finally, the

last two items are associated with the bystander or outsider role.

The latent classes that emerged among male students when looking at relational

bully participant roles can be found in Figure 2. The class identified by square markers and a

dashed line had a relatively high probability profile across all items and included 21.18% of

the sample. These students had a substantially higher level of endorsement across all the

relational BPRS items compared to the other two classes. Due to their involvement in all

bully participant roles, this class of students was labeled *High Involvement*. The next class,

identified by diamond markers and a solid line, provided the lowest level of endorsement on

all the relational BPRS items, suggesting they have little to no involvement in any of the

bully participant roles. Because of their low probability profile across all items, this class

was labeled *Low Involvement* and consisted of 33.85% of the sample. The third class had a

high probability of participating in the role of defender, identified by triangle markers and a

dotted line. This class was labeled *Defender* and consisted of 44.97% of the sample.

Three similar classes emerged from female students' responses to the relational

BPRS items (refer to Figure 3), along with a fourth class. The class identified by square

markers and a long-dashed line on the relational LCA had a relatively high probability of

endorsing all of the items. It included 19.43% of the sample and was labeled *High*

Involvement. The next class had a low probability of endorsing any of the items and was

labeled *Low Involvement*. This class and consisted of 23.10% of the sample and is identified

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by diamond markers and a solid line. The additional two classes were labeled based on a high probability profile on one of the bullying participant roles. The third class, denoted by triangle markers and a dotted line, had a higher probability of participating in the role of defender than the other three roles. This class was labeled *Defender* and consisted of 35.39% of the sample. The fourth class, labeled with circle markers and a short-dashed line, had a high probability of endorsing items related to victimization and defending behaviors. This class was labeled *Victim Defender* and consisted of 22.08% of the sample.

Physical LCA models. Looking at the physical LCAs, the first four items are associated with physical aggression, representing the participant role of bully, followed by four items related to being a victim of physical aggression (victim). The subsequent two are associated with defending behaviors in response physical victimization (defender), while the last four items involve the role of bystander.

Figure 4 depicts the latent classes that emerged among male students when looking at physical bully participant roles. The class identified by square markers and a dashed line had a high probability across all items and included 5.68% of the sample. These participants endorsed a substantially higher level of involvement among all bully participant roles, compared to the other two classes, and therefore was labeled *High Involvement*. The next class consisted of 56.75% of the sample and indicated a low probability profile across all items (identified by diamond markers and a solid line). This suggests they have little to no involvement in any of the bully participant roles and therefore was labeled *Low Involvement*. The third class (identified by triangle markers and a dotted line) had a high probability of participating in the role of victim and was labeled *Victim*, consisting of 37.17% of the sample.

Among female participants, three similar classes emerged plus one additional class (refer to Figure 5). The class identified by square markers and a long-dashed line had a relatively high probability of endorsing all bully participant roles. It included 12.12% of the sample and was labeled *High Involvement*. The next class had a low probability of endorsing any of the items and was labeled *Low Involvement*. This class consisted of 23.10% of the sample and is identified by diamond markers and a solid line. The third class, denoted by triangle markers and a dotted line, had a higher probability of participating in the role of victim and defender. This class was labeled *Victim Defender* and consisted of 21.58% of the sample. The fourth class, labeled with circle markers and a short-dashed line, had a moderate probability of endorsing items related to the role of bystander and defender. This class was labeled *Bystander/Defender* and consisted of 18.39% of the sample.

4. Comparing the Physical and Relational LCA Results

Among female students (see Table 5), the *High Involvement* class was larger in the relational LCA (19.43% of the sample fell in this group) compared to the physical LCA (only 12.12% of the sample fell in this group). Therefore, almost twice as many girls were involved in all four relational bully participant roles ($n = 59.66$) compared to physical bully participant roles ($n = 37.19$). For girls, the *Low Involvement* class was larger in the physical LCA (48.29% of the sample fell in the group) compared to the relational LCA (23.10% of the sample). Therefore, more than twice as many female students had close to no involvement in physical bully participant roles ($n = 148.25$) compared to relational ($n = 70.90$).

Both the physical and relational LCA with female students yielded a profile that endorsed high involvement in the role of Victim and Defender (*Victim Defender* class). The

Victim Defender class was approximately the same size in both relational and physical LCA (22.08%, *n* = 67.79 and 21.58%, *n* = 66.25 respectively). This class was much more delineated in the relational LCA, meaning the levels of endorsement were higher (a higher probability of responding "yes" to an item). A fourth class emerged for female students, which differed across the relational and physical LCA. In the relational LCA, a *Defender* class emerged (35.39%, *n* = 108.64), and in the physical LCA a *Bystander/Defender* class appeared (18.08%, *n* = 55.31), which was almost half as large.

Among male students, the *High Involvement* class was larger in the relational LCA (21.18% of the sample fell in this group) compared to the physical LCA (only 6.08% of the sample fell in this group). Therefore, almost four times as many boys were involved in all four relational bully participant roles (*n* = 55.91) compared to physical bully participant roles (*n* = 16.00). For boys, the *Low Involvement* class was larger in the physical LCA (56.75% of the sample fell in the group) compared to the relational LCA (21.18% of the sample). Therefore, almost three times as many male students had close to no involvement in physical bully participant roles (*n* = 149.25) compared to relational (*n* = 55.91).

The third class that emerged for male students differed across the relational and physical LCA. In the relational LCA, a *Defender* class emerged (44.97%, *n* = 118.73), while in the physical LCA a *Victim* class appeared (37.17.08%, *n* = 97.75). Therefore, it appears that victimization occurred more frequently with regards to physical bullying (more boys reported physical victimization than relational victimization).

5. Comparing Male and Female Students

When comparing the physical LCAs between boys and girls (see Table 5), it is evident that more girls fell into the *High Involvement* group (12.12%, *n* = 37.19) compared

to boys (6.08%, $n = 16.00$). However, it is important to note that these profiles look different, as the *High Involvement* group among boys has much greater endorsement levels across all items (predominantly between .80 and .90), whereas among girls there is greater variability in the level of indorsement (primarily between .60 and .85). This might explain the emerging result that more female students were involved in all four physical bully participant roles, as this profile reported overall lower levels of engagement in these roles.

Among male and female students, the *Low Involvement* class was larger in the physical LCA compared to the relational LCA. The low involvement groups were similar in size between male and female students for both the physical and relational LCA. Across gender, the relational LCA yielded a *Defender* profile, which was similar is size (approximately forty percent or one hundred students). For female students only, a fourth class emerged that endorsed victimization in addition to defending (*Victim Defender* class). This suggests more girls were involved in relational victimization compared to boys.

Looking at the physical LCAs, both boys and girls had a profile that endorsed victimization. This group was larger for boys (37.17%, $n = 97.75$) compared to girls (21.58%, $n = 66.25$), suggesting that more boys were victims of physical bullying compared to girls. For girls only, the physical LCA yielded a fourth group that endorsed mainly bystanding and defending behaviors (*Defender/Bystander* class). This suggests bystanding in reaction to physical bullying was more common for girls as compared to boys in the current sample.

E. Discussion

This study utilized LCA to empirically identify bully participant role profiles in seventh and eighth grade based on assuming multiple bully participant roles (bully, victim,

defending, and bystander) at varying degrees. Four separate LCA models were run, two relational LCAs and two physical LCAs split by gender. Male students' responses to the bully participant role items showed preference for a three-class model for both the relational and physical LCAs. Among female students, fit indices and theoretical reasoning showed preference for a four-class model for both the relational and physical LCAs. All four LCAs yielded a *High Involvement* class and a *Low Involvement* class. Regarding male students, a third *Defender* class was identified with regard to the relational LCA, and a third *Victim* class emerged with the physical LCA. Concerning female students, a third class, which was labeled *Defender*, emerged for both the relational and physical LCA. The final fourth class in each model for girls differed qualitatively. In the relational LCA with girls, a *Victim Defender* class was identified and in the physical LCA, a *Bystander*/*Defender* class emerged. Overall, these findings highlight the need for researchers to use methods that do not force participants into single discrete groups, as students in the present sample were found to align with either multiple or single roles at varying degrees of involvement. Understanding these nuances can help inform practitioners designing bullying prevention programs that target the multifaceted needs of students involved in bullying.

1. Emergent Bully Participant Roles

All four LCAs produced both a *High Involvement* and a *Low Involvement* class, which does not support previous research of clearly delineated bully participant roles (Nansel et al., 2001; Salmivalli et al.,1996). This finding suggests that bullying involves complex peer group dynamics and that youth might not predominantly endorse a single bully participant role. Rather, students may navigate through and assume multiple bully participant roles depending on the situation and context. Students in the *High Involvement*

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class had a high probability profile across all bully participant roles including bully, victim, bystander, and defender. This class consistently included the smallest proportion of students and varied in size from 6% (physical LCA with males) to 22% (relational LCA with males). Because students in these *High Involvement* classes had high probabilities of endorsing all four bully participant roles, it is possible that within the 30 days prior to data collection, these students shifted between roles within a single bullying instance, assumed multiple roles simultaneously, or switched between roles in various circumstances.

Across both genders, more students were classified in the *High Involvement* class in the relational LCA, compared to the *High Involvement* class in the physical LCA. Similar trends have been noted by previous scholars whose findings revealed that girls are more likely to experience indirect relational forms of bullying (Fekkes, et al., 2005; Gini, 2006) compared to physical forms. However, with regard to the male students, prior research has consistently indicated that boys experience direct physical forms of bullying more frequently than relational bullying (Card, Stucky, Sawalani, & Little, 2008; Murray-Close et al., 2016), which contradicts the current results suggesting male students were more frequently involved in relational bully participant roles. Overall developmental patterns in bullying subtype involvement provide a reasonable explanation for this finding. Specifically, physical bullying appears to decrease from elementary to middle and high school, while relational bullying increases, due to cognitive, social, and biological maturation (Bauman & Del Rio, 2006; Murray-Close et al., 2016). As adolescents develop increased interests in social interactions and the cognitive abilities to navigate them, they are more likely to engage in relational bullying (Ojanen & Findley-Van Nostrand, 2014). Therefore, it is possible that by grades seven and eight, male students tend to engage in relational bully participant roles

more frequently, like their female counterparts, due to greater skills in navigating social interactions.

Unfortunately, contemporary literature consistently reveals that relational bullying often fails to raise the concern of teachers who misinterpret this behavior as a normal part of development (Bauman & Del Rio, 2006; Yoneyama & Naito 2003). This is concerning as youth that are victims of relational bullying have been found to experience greater emotional distress (Bauman & Del Rio, 2006; Hawker, 1998), psychological maladjustment, and depression compared to physical bullying victimization (Crick & Bigbee, 1998; Crick, Grotpeter & Bigbee, 2002; Olweus, 1993). Moreover, victims have identified relational bullying as the most damaging (Sharp, 1995). Therefore, the current findings stress the need for bullying interventions to appropriately identify and address relational bullying and effectively support boys and girls involved in this form of bullying.

When comparing the relational LCAs across gender, approximately 20% of male and female students were classified into the *High Involvement* class. However, when looking at the physical LCA, the *High Involvement* class was approximately twice as large for girls (12.12%, $n = 37.19$) compared to boys (6.08%, $n = 16.00$). The difference in sample proportions of these *High Involvement* classes provides a possible explanation for girls reporting higher levels of physical bully participant roles, compared to boys. The *High Involvement* group among boys has much greater endorsement levels across all items (predominantly between .80 and .90), whereas among girls there is greater variability in the level of endorsement (primarily between .60 and .85). This might explain the emerging result that more female students were involved in all four physical bully participant roles, as this profile reported overall lower levels of engagement in these roles. This finding suggests

interventions might benefit from targeting a subgroup among boys, specifically, those that are highly involved in all roles.

All four LCAs identified a *Low Involvement* class. Because these students scored low on all of the bully participant roles, it is reasonable to posit that they were not exposed to any circumstances related to bullying during the thirty-day span prior to data collection. Therefore, they would not have had opportunities to participate as a defender, bystander, victim, or bully. These latent classes varied in size across the four LCAs, consisting of 34% to 57% of the samples.

A distinct *Victim* class emerged for boys in the physical LCA, but not in the relational LCA. A *Victim* class did not emerge among female students for either bullying subtype. Instead, female students endorsed a *Victim Defender* class in both the relational and physical LCAs. In the physical LCA, the *Victim* class for boys was larger than the *Victim Defender* class that emerged for girls, suggesting a greater proportion of boys experienced victimization in reaction to physical aggression, compared to girls. This supports previous literature indicating boys experience physical forms of bullying more frequently (Murray-Close et al., 2016; Card et al., 2008). Taken together with findings from the *High Involvement* classes across gender, it appears that, although both boys and girls are involved in relational bullying more frequently compared to physical bullying, boys experience physical victimization more frequently compared to girls. Thus, boys in middle school may be especially prone to both relational and physical bullying. Based on these results, it is recommended that school interventions tailored to boys prioritize exploring triggers of physical aggression, providing ongoing support, and teaching the skills students need to prevent and defend themselves against physical bullying.

Finally, a distinct *Defender* class emerged for both boys and girls in the relational LCAs but not the physical LCA. This class consisted of 35% to 45% of the sample and primarily endorsed the role of defender above all other roles. A reasonable explanation for a *Defender* class only emerging in the relational LCAs is that students feel more comfortable defending victims of relational bullying, as compared to physical bullying. On the other hand, youth might be more fearful of physical defending due to the consequences associated with physical retaliation, compared to relational aggression. Given this finding, interventions targeting defending behaviors should focus on increasing the resources available for students to seek help when physical bullying occurs. In addition, bullying prevention programs can provide the skills students might need to defend themselves and others against physical bullying.

Several qualitative studies have examined factors that potentially explain why students classified in the *High Involvement* class assumed multiple roles or switched between roles in this study. A study conducted by Gumpel et al. (2014) found that students transitioned between the roles of defenders, bystanders, assistants to bullies, and reinforcers of bullying. These transitions were dependent on perceptions of other students, the influence of teachers and peers, and finally, environmental context. According to Cole (1998), context is a weaving process in which different elements, or threats, weave together to create new patterns and systems. With this in mind, further research should examine how various individual and environmental factors weave together to create unique bullying patterns, such as school climate factors and perceptions of social status.

Examining the socio-ecological factors in middle school can provide several logical explanations for students' participation in multiple bully participant roles. The transition

from elementary school to middle school involves a multitude of physical, social, emotional, and situational changes. In order to navigate this substantial change, various scholars have suggested students partake in both prosocial and anti-social behaviors (Hawley, 2003). Specifically, it has been theorized that students use both coercive and prosocial behaviors to establish status, influence, and acceptance among peers (Pellegrini & Bartini, 2001; Williford et al, 2011). Prosocial behaviors include kindness, cooperation, and helpfulness (Findley & Ojanen, 2013). Coercive behaviors include physical, verbal, and relational aggression. Contemporary literature reveals that students who use both strategies experience more positive outcomes, such as attention from peers and having friends (Hawley, 2003; Hawley, Little & Card, 2007; Findley & Ojanen, 2013). Moreover, teachers and peers have been found to view youth that use both strategies to be socially-skilled and accepted by peers, as well as aggressive and hostile (Hawley, 2003, Hawley, Little & Card, 2007; Findley & Ojanen, 2013). Interestingly, a recent study identified that prosocial and coercive strategies are positively correlated, indicating individuals more often use both strategies (Findley & Ojanen, 2013). Findings from this literature provides a reasonable explanation for students participating in multiple participant roles, as they explore both prosocial and coercive mechanisms to gain social acceptance, status, and control. Given this, future research should examine if students in the *High Involvement* class, which is characterized by aggressive and defending behaviors, have acquired greater social status, such as popularity.

The *High Involvement* class provides additional support for the bully-victim theory (Nansel et al., 2001), which posits that victims of bullying are more likely to bully others (Barboza et al., 2009). Anderson et al. (2003) reported that bullies were more than twice as likely to report being bullied compared to other children at school. Accordingly, students in

this sample who endorsed engaging in aggressive behaviors also endorsed being victims, confirming prior research that noted the high co-occurrence rates between victimization and perpetration (Goldweber, 2013).

Along the same vein, the *High Involvement* class aligns with previous scholarship that indicates students are unlikely to assume solely the role of aggressor. Williford et al. (2001) and Goldweber et al. (2013) utilized LCAs to examine bully participant roles based only on victim and aggressor. Their findings demonstrated aggressive behavior only occurred in conjunction with the victim role. In the present study, students who endorsed aggressive behaviors also reported victimization, defending, and bystanding. Thus, practitioners and other professionals who might view a student as aggressive and exhibiting bullying behaviors may not be aware this student may also be experiencing victimization or may also display defender and bystander behaviors. Understanding the nuances of this hypothetical student's experiences with other roles might be critical in decreasing this student's bullying behaviors. Furthermore, Williford et al. (2011) did not find stability in the roles of aggressor and victim over time. Rather, aggression and victimization occurred in "episodes or spells" (Williford et al., 2011). This further suggests that roles are assumed based on various socio-ecological variables and contextual factors (such as school climate and peer group dynamics).

2. Implications

The current study makes several notable contributions to the literature surrounding bully participant roles. First, to the researchers' knowledge, this is the only study to date that uses LCA to examine patterns of bullying involvement across four different bully participant roles: bully, victim, defender, and bystander. This allowed for the identification of groups of

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students that endorsed involvement across multiple bully participant roles, which builds upon findings from studies that have used relatively arbitrary cut-off scores. Second, the current findings have the potential to increase our understanding of social dynamics at a critical stage of development. By conducting four separate LCAs, this analysis was able to qualitatively compare subgroups that emerged related to relational and physical bully participant roles, which were split by gender. Across the relational and physical LCAs, the classes that emerged differed in their characteristics. This finding may indicate that involvement in the bullying process is complex and may unfold differently, depending on the type of aggression and gender of participants involved. Finally, on a practical level, this has important implications for designing bullying interventions that are tailored to students' needs based on gender and type of bullying.

Extent bullying literature suggests physical aggression is the most easily observable type of bullying and, as a result, receives the most attention from teachers, schools (Bauman & Del Rio, 2006; Murray-Close at al., 2016; Scheithauer et al., 2006), and researchers (Murray-Close, Nelson, Ostrov, Cases, & Crick, 2016; Veestra et al., 2005). In conjunction with this, research findings indicate teachers are less likely to consider relational conflict as problematic and intervene when this type bullying occurs (Hazler, Miller, Carney, & Green, 2001). Consequently, students have been found to opt out of reporting relational conflict to adults at school (Birkinshaw & Eslea, 1998). This is concerning as results from the current study reveal involvement in relational bullying occurs more frequently compared to physical bullying for both male and female students in grades seven and eight. Based on these findings, it is recommended that bullying interventions highlight effective strategies to appropriately recognize relational bullying and teach students the skills they need to prevent

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and address relational conflict. Furthermore, students and staff may find it useful to increase their awareness of direct and indirect forms of relational bullying. Specifically, indirect forms include gossiping, telling lies about someone, spreading rumors, and isolating/ignoring another person, and direct forms involve overtly excluding or isolating another person, such as telling another person they are not welcome at a party. Finally, schools might benefit from reminding students that although relational bullying can appear less hurtful, as it does not necessarily include physical injuries, it has equally damaging consequences, such as emotional distress (Bauman & Del Rio, 2006; Hawker, 1998) and depression (Crick & Bigbee, 1998; Crick, Grotpeter & Bigbee, 2002; Olweus, 1993).

Results from the current study suggest male and female students defend victims of relational bullying more frequently than physical bullying. A reasonable explanation for this finding is that students feel more comfortable and are more readily able to defend victims of relational aggression, as it is less likely to require physical participation. In light of this, bullying prevention programs that target defending behaviors may need to focus on providing students with the skills they need to defend themselves and others more frequently, particularly in reaction to physical bullying. This could include increasing help-seeking behaviors and educating students to use words, instead of physical force, to support students that are victims of physical aggression. In addition, schools might benefit from increasing the resources available for students to seek help, such as having an ongoing direct line of communication available with staff. Finally, this study revealed that boys experience physical victimization more frequently compared to girls. As such, school personnel should take greater precautions to maintain a safe and supportive environment for boys at school where boys can more easily seek help for themselves and others.

Overall, these results emphasize the need for schools to implement comprehensive school-wide bullying interventions in addition to programs that target specific genders, types of bullying, and high-risk students (Farrington & Ttofi, 2009; Williford et al., 2011). Universal programs have been shown to promote a positive school climate and subsequently increase a sense of safety and community by cultivating appropriate norms about bullying, values, and expectations. This can play a critical role in helping students involved in bullying seek help and follow norms that foster prosocial behaviors.

III. Chapter 3: Study 2

Cross-national studies consistently highlight that bullying is a pervasive problem in schools (Garandeau, Lee, & Salmivalli, 2014; Lucas-Molina, Williamson, Pulido, & Calderón, 2014) resulting in various academic and social-emotional problems, including truancy, depression, and substance abuse (Veenstra et al., 2005). It is commonly defined as negative mean behavior that occurs repeatedly over time, in a relationship that is characterized by an imbalance of power or strength (Olweus, 1993). Several subtypes of bullying have been recognized by scholars, including physical, verbal, indirect/relational, and cyber aggression (Patton, Hong, Williams, & Allen-Meares, 2013). Although research on bullying has historically focused on individual characteristics and their link to bullying involvement, recent studies have begun to investigate the impact that socio-ecological factors has on the progression of bullying and the development of youth (Barboza et al., 2009). Examples of the multiple systems influencing bullying include families, schools, peer groups, neighborhoods, cultural expectations, and government laws (Bronfenbrenner, 1979). To expand the knowledge base regarding the variables that influence, sustain, or deter bullying behaviors from a holistic perspective, both individual characteristics and contextual factors must be taken into consideration.

Using the results from Study I, the current study investigated how the bullying profiles previously identified relate to school climate factors and perceptions of social status. Specifically, three school climate factors were examined, including school-wide efforts to reduce bullying, student knowledge of how to address bullying, and direct communication between students and school staff about bullying. Furthermore, two components of social status were explored, self-reported levels of popularity and likability (frequently referred to

as sociometric status). Expanding the knowledge base concerning the socio-ecological

factors influencing bullying can provide insight into the development of best practices with

respect to designing effective bullying prevention programs that target specific features and

dynamics at school.

A. School Climate

Adopting a socio-ecological framework, many researchers have identified the active

role school climate plays in influencing bullying behaviors (Kasen et al., 2004; Steffgen et

al., 2013). School climate embodies the culture of a school, encompassing school norms,

values, interpersonal relationships, organizational structures, and goals (Espelage, Polanin,

& Low, 2014). It does not reflect the physical qualities of a school, but instead its

psychosocial qualities, such as students' relationships with school staff, peers, policies, and

norms (Espelage et al., 2014). These factors are essential in helping students feel safe,

welcome, and connected at school (Cortes & Kochenderfer-Ladd, 2014). A review of

contemporary school climate research indicates students who do not feel safe at school are at

risk of school avoidance, low attendance, difficulty concentrating, and poor academic

outcomes, along with other socio-emotional risks including depression and limited peer

support (e.g., Bauman & Del Rio, 2006).

In an effort to reduce bullying incidences and victimization, schools increasingly

address students' sense of safety by improving school climate (Cortes & Kochenderfer-

Ladd, 2014). In doing so, schools take direct action to address bullying (e.g., by

implementing anti-bullying programs; Cortes & Kochenderfer-Ladd, 2014), teach students

the skills they need to appropriately respond to bullying (Frey et al., 2005), and facilitate

ongoing communication between students and school staff. The direct impact school climate

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has on bullying incidence rates has been a substantial area of concentration in research (Espelage, Bosworth, & Simon, 2000; Goldweber, Waasdorp, & Bradshaw, 2013; Scheithauer et al., 2006; Totura et al., 2009). Overall trends from these studies suggest that students who have a more positive view of their school are less likely to engage in aggressive behaviors, while students who have negative school perceptions have an increased rate of involvement in bullying, both as a perpetrator and a victim (e.g., Espelage et al., 2014). These findings highlight the need for scholars to expand on this research and examine the relations between student perceptions of school climate and bullying profiles. More specifically, the degree to which students recognize the efforts put forth by schools to tackle bullying (school efforts), students' perceived ability to effectively intervene when bullying occurs (intervention competence), and students' perceived comfort level in communicating with adults about bullying (comfort communicating).

1. School Efforts

Bullying develops and is maintained at school through intricate and multifaceted interactions between peers, teachers, and other school related variables (Gini, 2006). Whether faculty make a direct effort to prevent and respond to bullying is very much shaped by the school climate, which dictates norms, goals, and expectations (Espelage et al., 2014). Scholars who have examined middle school students' perceptions of school effort have revealed that students frequently believe teachers and administrators do nothing to stop bullying (Bauman & Del Rio, 2006; Bosworth, Espelage, & Simon, 1999; Casey-Cannon, Hayward, & Gowen, 2001). Such results are especially troubling as students are left to believe bullying behaviors are acceptable, tolerated, or condoned. Moreover, stifled efforts to prevent bullying sends the message to students that their well-being, comfort level, and

safety at school is of low priority and that they cannot count on adults at school for protection (Bauman & Del Rio, 2006; MacNeil & Newell, 2004). This can have the unintended consequence of further perpetuating bullying and aggressive behaviors due to the lack of support promoted at school.

Bullying prevention programs are helpful in that they provide explicit guidelines for schools to follow when responding to bullying incidents as well as proactive steps to prevent bullying (Frey, et al., 2005; Pepler, Craig, Ziegler, & Charach, 2009). For example, school staff may be trained on how to respond to perpetrators, support victims, and re-establish positive relationships between peers. Anti-bullying interventions might train instructors to teach, model, and encourage the use of various prosocial skills (e.g., listening, empathy, sharing, and teamwork skills), as well as improve classroom management, teaching strategies, increase accountability, and encourage students to be caring and respectful (Frey, et al., 2005; Salmivalli, Kaukiainen, & Voeten, 2005). Implementing strategies such as these demonstrates increased school efforts to improve school climate and ensure that students feel safe at school.

2. Intervention Competence

In addition to outlining explicit guidelines for schools to follow when responding to bullying incidents, bullying programs regularly empower students themselves by providing them with the skills they need to appropriately respond to bullying when it occurs (Beale & Scott, 2001; Frey et al. 2005). Providing students with the skills they need to personally intervene is especially important because bullying often occurs when adults are not present (e.g., during recess on the playground; Fekkes et al., 2005). Bullying interventions, such as Steps to Respect (Frey et al., 2005), aim to teach and encourage socially responsible and

effective behaviors in response to bullying, including assertive responses such as "Stop, that is bullying," immediately reporting the bullying to an adult, and having the coping skills necessary to regulate distress (Frey et al., 2005). Additionally, they frequently aspire to increase defending and help-seeking behaviors and reduce bystanding when bullying occurs (Lucas-Molina, et al., 2014).

Frey et al. (2005) conducted a study examining the effectiveness of the anti-bullying program Steps to Respect - which teaches personal intervention strategies - by randomly assigning six schools to an intervention or control condition. The playground behaviors of students in third through sixth grade were observed and students were asked to complete a survey of behaviors and beliefs before and after the intervention period. Results from this investigation suggested a decrease in bullying, argumentativeness, and bystanding behaviors for students in schools that took part in the intervention. Furthermore, students in the intervention group reported greater perceived adult responsiveness to bullying incidences, compared to those in the control group.

3. Comfort Communicating

Research suggests that facilitating an open line of communication between students and adults can play a substantial role in the reduction of victimization, as students are able to seek support from parents, teachers, and other adults (Cortes & Kochenderfer-Ladd, 2014). Cortes and Kochenderfer-Ladd (2014) investigated the relations between students' comfort level of reporting bullying and victimization among third and fifth grade students. In this study students in 34 classrooms completed surveys indicating how willing they would be to talk to their teachers about bullying. Classrooms were assessed based on rates of victimization. Results indicated classrooms with higher rates of willingness to communicate

had lower rates of victimization, suggesting communication between students and adults can be an effective strategy to combat bullying.

Although there is evidence that students' willingness to communicate with teachers about bullying can effectively reduce victimization (Cortes & Kochenderfer-Ladd, 2014), scholars have suggested that students will not seek help without evidence that school staff will effectively respond (Troop-Gordon & Quenette, 2010). This is troubling as several studies indicate youth perceive teachers to be oblivious or incognizant of bullying incidents (Bauman & Del Rio, 2006; Cohn & Canter, 2002). Swearer and Cary (2003) investigated the perceptions of middle school students in the United States and found that 80% of the sampled adolescents believed adults in schools are unaware of bullying. Regarding the perception of adults at school, some research suggests teachers ignore bullying because they believe it is a normal part of development (Yoneyama & Naito, 2003). According to Cohn and Canter (2002), 25% of teachers do not feel that bullying is wrong and as a result only intervened in four percent of bullying episodes. Based on these statistics, it is not surprising that students have been found to report bullying incidents to their parents more often compared to teachers. Specifically, Fekkes et al. (2005) examined bullying involvement in Dutch elementary schools, finding that only 53% of the regularly bullied children told their teacher that bullying took place, while 67% told their parents they were bullied.

Scholarship has revealed that relational bullying has an even greater probability of going unnoticed by teachers and other school staff because it is more subtle than physical bullying (Bauman & Del Rio, 2006). Moreover, teachers have been found to be less likely to consider relational bullying as problematic (Hazler, Miller, Carney, & Green, 2001), and consequently students are less likely to report relational bullying to adults (Birkinshaw &

Eslea, 1998). Birkinshaw and Eslea (1998) and Yoon and Kerber (2003) conducted studies to compare the level of teacher involvement in response to verbal, physical, and relational bullying. In the United Kingdom, Birkinshaw and Eslea (1998) found that although teachers punished physical and verbal acts, relational bullying received no consequences. Similarly, Yoon and Kerber (2003) found significantly lower ratings of seriousness from teachers in response to relational bullying, as compared to verbal and physical. These statistics are concerning and highlight the need for schools to promote agency and discourse between students and staff.

School Climate and Bully Participant Roles. Extensive literature has investigated the association between bully participant roles and school climate (e.g., Perkins, Craig, & Perkins, 2011). Regarding the role of bully, findings from recent studies suggest bullying instances are higher when schools lack explicit rules/norms about bullying and when students experience a lack of personal connection to their school. Perkins, Craig, and Perkins (2011) examined how perceptions of school norms toward bullying relate to bullying behaviors. Results from their study indicated that after one year of providing explicit school norms, such as, "This school does not exclude someone from the group to make them feel bad," students reported a significant reduction in bullying behaviors. Using a sample of middle school students attending private Catholic schools, Cunningham (2007) found that students with lower levels of bullying and victimization experienced greater attachment to their school. Rates of aggression and victimization have also been found to decrease in schools where students have trusting relationships with teachers and when there are caring adults available (Corrigan, Klein, & Isaacs, 2010).

According to Gage, Prykanowski, and Larson (2014), when school norms condone aggression (physical, verbal, relational), students are likely to feel threatened and engage in risky behaviors, such as bullying or aggression. The aforementioned authors referred to this phenomenon as self-protective bullying, which is postulated to occur in reaction to levels of social well-being being threatened. In this same line of reasoning, a positive school climate can have the opposite effect and encourage alternative ways to address conflict that do not include bullying perpetration and victimization (Gage et al., 2014).

Looking at the role of victim, research findings suggest youth who are victimized are less likely to feel involved at school (O'Brennan, Bradshaw, & Sawyer, 2009) and less likely to perceive adults as being able to protect them (Cunningham, 2007). Results from a recent study by Gerlinger and Wo (2016) indicated that an authoritative school climate, which provides a clear set of rules and expectations regarding bullying, was more strongly related to lower victimization than school security measures, such as metal detectors and guards. These findings emphasize the critical role school climate plays in reducing the bully participant role of victim. A review of recent literature suggests very little research has investigated how school climate factors impact other bully participant roles, such as defending and bystanding behaviors. Across two studies, having a positive school climate was found to increase defending (Eliot, Cornell, Gregory, & Fan, 2010) and help-seeking behaviors in response to bullying (Unnever & Cornell, 2004). Given this dearth in the literature, the current study examined how four bully participant roles (bully, victim, defender, and bystander) relate to three measures of school climate.

B. Social Status

Social status has been a key area of research since the 1970s among scholars investigating social development and peer relations (Farmer, Hall, Leung, Estell, & Brooks, 2011). Under the umbrella of social psychology, social status has been defined as the extent to which a person is admired and respected (Cheng, Tracy, Foulsham, Kingstone, & Henrich, 2013). Students identified as having low social status have been found to be at risk of internalizing and externalizing problems (Camodeca et al., 2015; McDougall, Hymel, Vaillancourt, & Mercer, 2001), school dropout, poor school adjustment, substance abuse, and criminality (Farmer et al., 2011; Kupersmidt, Coie, & Dodge, 1990). On the other hand, having high social status in school has been linked to long-term positive adjustment (Farmer et al., 2011; Rubin, Bukowski, & Parker, 1998).

1. Sociometric Status and Popularity Status

Scholars have distinguished two types of social status: sociometric status and popularity status (Farmer et al., 2011; LaFontana, & Cillessen, 2002). Sociometric status relates to how much an individual is liked by peers, whereas popularity relates to how salient and influential an individual is. As such, social status is an index of a person's likability or acceptance within a social system while popularity measures the degree to which a person is central to the peer system, by being prominent and influential. Both sociometric status (likability) and popularity have historically been measured via peer nomination (Farmer et al., 2011; Farmer, Estell, Bishop, O'Neal, & Cairns, 2003; Garandeau, Lee, & Salmivalli, 2014; Garandeau, Ahn, & Rodkin, 2011; LaFontana, & Cillessen, 2002; Sentse et al., 2014), although a few studies have used self-reports to measure these constructs (Diego, Field, & Sanders, 2003; Feingold, 1983; Harter, 1982;

Holder & Coleman 2008; McElhaney, Antonishak, & Allen, 2008). With respect to studies that have examined bullying, no study to date has used self-reports measures of social status when linking it and bullying involvement.

The relation between bullying and social status has produced a complex picture for researchers. Contemporary literature indicates sociometric status (likability) and popularity are only moderately correlated (Pouwels et al., 2015; Sentse et al., 2014), which contradicts the reasonable conclusion that people who are liked are also popular. The divergence between these two constructs seems to relate to aggressive behaviors, while the overlap between popularity and likability appears to be related to prosocial behaviors (Farmer et al., 2011; LaFontana & Cillessen, 2002). Specifically, sociometric status has been linked to low levels of aggression along with high levels of prosocial behavior, whereas, popularity has been linked to higher levels of aggression, as well as prosocial behavior. These findings relate back to research suggesting that aggressive behavior can be both adaptive and maladaptive. It appears that youth who engage in bullying are rewarded with popularity status, therefore gaining visibility and influence, yet they are also disliked (Hawley, 2003, Rodkin et al., 2015). Despite these trends in the literature, no study to date has examined how self-reports of bullying behaviors relate to self-perceived sociometric status and popularity.

Scholars have postulated that gaining popularity through aggression is an important motive for why bullying peaks in middle school and why adolescents engage in bullying overall (Garandeau et al., 2014; LaFontana & Cillessen, 2010; Pouwels et al., 2015; Sentse et al., 2014). As previously mentioned, research indicates popularity, the approval of peers, and dominance becomes increasingly important in adolescence (LaFontana & Cillessen,

2010; Ojanen & Kindley-Van Nostrand, 2014; Sentse et al., 2014). Findings from LaFontana and Cillessen (2010) suggest adolescents prioritize popularity over likability and become more attracted to aggressive behavior and less attracted to prosocial behavior (Gini, 2006). Therefore, youth who are attempting to acquire social rank and status may engage in bullying, which has been found to be effective in attaining these goals (Sentse et al., 2014). Both cross-sectional (Berger & Rodkin, 2012; Garandeau et al., 2014) and longitudinal studies (Cillessen & Borch, 2006) demonstrate a positive association between bullying and popularity. Houghton, Nathan, and Taylor, (2012) interviewed adolescents who were asked to leave school due to bullying in order to investigate their motive for the aggressive behavior. Their responses revealed the primary reason for initial bullying was to gain recognition and respect, while continued bullying was motivated by a desire to maintain that reputation.

According to Hawley (2003), students use both coercive and prosocial behaviors to establish status, influence, and acceptance among peers (Pellegrini & Bartini, 2001; Williford et al, 2011). Prosocial behaviors include defending, kindness, and cooperation helpfulness (Findley & Ojanen, 2013) and coercive behaviors include various forms of aggression. Literature suggests students who use both strategies obtain desired outcomes, such as attention from peers, popularity, and having friends (Findley & Ojanen, 2013; Hawley, 2003; Hawley, Little & Card, 2007). Moreover, teachers and peers have been found to view students who use both strategies as socially-skilled and accepted by peers, as well as aggressive and hostile (Findley & Ojanen, 2013; Hawley, 2003, Hawley, Little & Card, 2007). Finally, scholarship has indicated that prosocial and coercive strategies are positively rather than negatively correlated, indicating individuals may often use both strategies

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(Findley & Ojanen, 2013). Relating these findings back to bullying, qualitative studies reveal that students participate in multiple bully participant roles (i.e., Goldeweber et al., 2013), including those that are prosocial (e.g., defender) and anti-social (e.g., bully or bystander). This provides an explanation for students' participation in multiple roles, as they explore both prosocial and coercive mechanisms to gain social acceptance, status, and control.

Social Status and Bully Participant Roles. The association between bully participant roles and social status has been examined by various researchers (Lucas-Molina et al., 2014; Pouwels et al., 2015; Sentse et al., 2014). Contemporary literature suggests youth who take on the role of bully are popular (Farmer et al., 2002; Garandeau et al., 2014; Pouwels et al., 2015) because of their visibility and power (Camodeca et al., 2015), but highly disliked (Cheng et al., 2024; Goossens et al., 2006; Pouwels et al., 2015; Sentse et al., 2015). Therefore, although bullies are sociometrically rejected, they appear to have a central position among peers. Across studies, youth who are victimized score low on popularity and liking (Pouwels et al., 2015). Victims tend to hold the lowest position amongst their peers, often as a result of continuous bullying (Lucas-Molina et al., 2015). Adolescents that defend victims are consistently liked (Camodeca et al., 2015; Pouwels et al., 2015) and popular (Goossens et al., 2006; Lucas-Molina et al., 2014; Pouwels et al., 2015). Although defending is considered a prosocial behavior that is often valued by peers, some research findings suggest the association between defending and popularity is less strong in adolescents compared to childhood (Pouwels et al., 2015; Sainio, Veenstra, Huitsing, & Salmivalli, 2011). Interestingly, a study conducted by Caravita et al. (2009), indicated the defender role was related to popularity for girls, but not for boys. Finally, only a few studies have

examined the role of bystander or outsider, finding that adolescents who take on this role have low popularity and average likability (Camodeca et al., 2015; Pouwels et al., 2015). In all of the aforementioned studies, social status has been associated with individual bully participant roles. However, no study to date has examined social status in relation to profiles consisting of multiple bully participant roles.

2. Anti-Bullying Interventions and Popularity

Though schools worldwide are increasingly implementing anti-bullying programs aimed at reducing victimization, research findings suggest these programs often have limited success (Garandeau et al., 2014). According to Smith (2004), the majority of interventions reduce victimization by 5% to 20%. A meta-analysis examining 13 evaluations found that programs overall have a "definite but small impact" on bullying behaviors (Rigby, 2002; p. 219), while another meta-analysis suggested about one half of interventions have no effect (Baldry & Farrington, 2007). One possible explanation for the limited success of these programs is that bullies receive highly coveted rewards from their continued aggression (Volk, Camilleri, Dane, & Marini, 2012). To test this hypothesis, Garandeau et al. (2014) examined whether anti-bullying interventions are less effective for popular bullies, as compared to less popular bullies. The study was conducted in Finland, with 911 third, fourth, and fifth graders, across 77 schools, about half of which were implementing KiVa, an anti-bullying program. The other half of the schools were considered a control group. The KiVa program was implemented for the entire school year and data were collected pre- and post-intervention. Students were categorized into bullies with high, medium, and low popularity based on peer nominations of popularity and bullying participation, pre- and post-intervention. Results revealed decreases in bullying behaviors were significantly smaller for

popular bullies, compared to bullies low in popularity. Specifically, for bullies with low popularity, participation in the KiVa program yielded fewer peer nominations of bullying, which was a demonstration of improvement. However, for popular bullies, participation in the KiVa program did not result in significantly lower nominations of bullying. Thus, the link between social status and bullying precluded decreases in bullying behaviors. These findings stress the need for researchers to further investigate how social status impacts bullying involvement, as this can aid in the design of more effective bullying prevention programs.

C. The Current Study

The current study examined whether various school climate and social status factors significantly predict membership in bullying profiles. Specifically, three school climate factors, school effort, intervention competence, and comfort communicating, and two components of social status, popularity and sociometric status, were added as covariates to the final LCAs models identified in Study 1. Understanding how bullying profiles relate to school climate factors and social status may yield a new perspective on social dynamics at school and provide insight on how best to develop effective bullying interventions and prevention programs. The following twenty research questions and corresponding hypotheses were proposed.

1. Questions and Hypotheses

Study 2. Covariates
School Effort
  Relational Bullying

Question one. *Does school effort predict membership in the relational latent classes among <u>male students</u>?*

Hypothesis one. Male students that perceive higher levels of school effort will be more likely to be classified into the *Defender* and *Low Involvement* class.

Question two. *Does school effort predict membership in the relational latent classes among <u>female students</u>?*

> **Hypothesis two.** Female students that perceive higher levels of school effort will be more likely to be classified into the *Defender* and *Low Involvement* class.

Physical Bullying

Question three. *Does school effort predict membership in the physical latent classes among <u>male students</u>?*

> **Hypothesis three.** Male students that perceive higher levels of school effort will be more likely to be classified into the *Low Involvement* class.

Question four. *Does school effort predict membership in the physical latent classes among <u>female students</u>?*

> **Hypothesis four.** Female students that perceive higher levels of school effort will be more likely to be classified into the *Low Involvement* class.

Comfort Communicating

Relational Bullying

Question five. *Does comfort communicating with adults at school predict membership in the relational latent classes among <u>male students</u>?*

> **Hypothesis five.** Male students that report higher levels of comfort communicating with adults will be more likely to be classified into the *Defender* and *Low Involvement* class.

Question six. *Does comfort communicating with adults at school predict membership in the relational latent classes among <u>female students</u>?*

> **Hypothesis six.** Female students that report higher levels of comfort communicating with adults will be more likely to be classified into the *Defender* and *Low Involvement* class.

Physical Bullying

Question seven. *Does comfort communicating with adults at school predict*

membership in the physical latent classes among <u>male students</u>?

    Hypothesis seven. Male students that report higher levels of comfort communicating with adults will be more likely to be classified into the *Low Involvement* class.

Question eight. *Does comfort communicating with adults at school predict membership in the physical latent classes among <u>female students</u>?*

    Hypothesis eight. Female students that report higher levels of comfort communicating with adults will be more likely to be classified into the *Low Involvement* class.

Intervention Competence

  Relational Bullying

Question nine. *Does intervention competence predict membership in the relational latent classes among <u>male students</u>?*

    Hypothesis nine. Male students that report higher levels of intervention competence will be more likely to be classified into the *Defender* and *Low Involvement* class.

Question ten. *Does intervention competence predict membership in the relational latent classes among <u>female students</u>?*

    Hypothesis ten. Female students that report higher levels of intervention competence will be more likely to be classified into the *Defender* and *Low Involvement* class.

Physical Bullying

Question eleven. *Does intervention competence predict membership in the physical latent classes among <u>male students</u>?*

    Hypothesis eleven. will be more likely to be classified into the *Low Involvement* class.

Question twelve. *Does intervention competence predict membership in the physical latent classes among <u>female students</u>?*

    Hypothesis twelve. Female students that report higher levels of intervention competence will be more likely to be classified into the *Low Involvement* class.

Popularity Status

   Relational Bullying

      Question thirteen. *Does popularity predict membership in the relational latent classes among <u>male students</u>?*

         Hypothesis thirteen. Male students that report higher levels of popularity will be more likely to be classified into the *Defender* and *High Involvement* class.

      Question fourteen. *Does popularity predict membership in the relational latent classes among <u>female students</u>?*

         Hypothesis fourteen. Female students that report higher levels of popularity will be more likely to be classified into the *Defender* and *High Involvement* class.

   Physical Bullying

      Question fifteen. *Does popularity predict membership in the physical latent classes among <u>male students</u>?*

         Hypothesis fifteen. Male students that report higher levels of popularity will be more likely to be classified into the *High Involvement* class.

      Question sixteen. *Does popularity predict membership in the physical latent classes among <u>female students</u>?*

         Hypothesis sixteen. Female students that report higher levels of popularity will be more likely to be classified into the *High Involvement* class.

Sociometric Status (Likability)

   Relational Bullying

      Question seventeen. *Does sociometric status predict membership in the relational latent classes among <u>male students</u>?*

         Hypothesis seventeen. Male students that report higher levels of sociometric status will be more likely to be classified into the *Defender* and *Low Involvement* class.

      Question eighteen. *Does sociometric status predict membership in the relational latent classes among <u>female students</u>?*

Hypothesis eighteen. Female students that report higher levels of sociometric status will be more likely to be classified into the *Defender* and *Low Involvement* class.

Physical Bullying

Question nineteen. *Does sociometric status predict membership in the physical latent classes among* <u>*male students*</u>*?*

Hypothesis nineteen. Male students that report higher levels of sociometric status will be more likely to be classified into the *Low Involvement* class.

Question twenty. *Does sociometric status predict membership in the physical latent classes among* <u>*female students*</u>*?*

Hypothesis twenty. Female students that report higher levels of sociometric status will be more likely to be classified into the *Low Involvement* class.

D. Methods

1. Participants

The participants included were selected from a middle school in southern California. No student was excluded on the basis of disability or special education eligibility. The final sample, $N = 572$, included 46% ($n = 265$) male students and 54% ($n = 307$) female students, as well as 50% ($n = 288$) seventh graders and 50% ($n = 284$) eighth graders. With regard to ethnicity, the final sample included 41% Latino/a ($n = 236$), 42% Caucasian ($n = 241$), 7% Asian ($n = 38$), 1% African American ($n = 6$), 1% Native American ($n = 4$), 7% Multi-Racial ($n = 41$), .5% Middle Eastern ($n = 3$), and .2% Native Hawaiian ($n = 1$).

2. Measures

Bully Participant Role Survey. The Bully Participant Role Survey (BPRS; Summers & Demaray, 2009) was developed to differentiate bully participant roles. The scale consists of 48 likert-scale items and is intended for children in fifth to eighth grades. It measures students' perceptions of bullying in their school and assesses four different

bullying participant roles: bully, victim, defender of the victim, and outsider (bystander).

Students are asked to indicate how frequently they engaged in relevant activities in the past

30 days using a five-point scale (1 = *never,* 2 = *1-2 times,* 3 = *3-4 times,* 4 = *5-6 times, and*

5 = *7 or more times*). These items were dichotomized, with the response "Never" coded as

zero, and all other responses coded as one. Examination of the psychometric properties of

the BPRS indicated accuracy in identifying various participant roles in bullying situations

(Summers & Demaray, 2009). The scale has been shown to have strong internal consistency

(Cronbach's alpha = .93) and validity (Summers & Demaray, 2009). For the purposes of this

study, some of the 48 items were excluded for substantive reasons. Specifically, a total of 14

BPRS items that relate to relational bullying participant roles were used (see Table 1) and 14

BPRS items were also used that relate to physical bullying (see Table 2).

Bullying Attitudes Measure. The Bullying Attitudes Measure (BAM; Stifel, 2013)

was designed to measure students' perception of bullying within the larger school context,

capturing both student and school-wide factors. The measure uses a socio-ecological

perspective by examining students' perceptions regarding school efforts in reducing bullying

and students' self-perceived ability in personally intervening when bullying occurs.

Additionally, the scale measures a student's comfort level in communicating with others

about bullying in order to receive support. Specifically, the BAM uses a 15-item scale (see

Table 6) in order to measure three factors: school community efforts (SCE), which examines

students' perceptions of the actions taken by the school community to address bullying;

personal communication competence (PCC), which examines students' comfort in

communicating with adults about bullying experiences; personal intervention competence

(PIC), which examines students' perceived ability to effectively intervene on behalf of self

or others in bullying situations. The items are positively worded reflecting favorable attitudes (e.g., "Bystanders should help kids who are bullied") for sixth through eighth grade students. Students rated their level of agreement to these items using a 4-point scale (1 = *totally false*, 2 = *sort of false*, 3 = *sort of true*, 4 = *totally true*). Previous studies utilizing the BAM have shown acceptable levels of internal consistency. Cronbach's alpha for each subscale was greater than or equal to .80 (SCE: α = .80; PCC: α = .82; PIC: α = .80).

Popularity status. Popularity status was assessed using one observed self-report question. Students were asked, "On a scale of 1 through 10, how POPULAR are you amongst your peers at school?"

Sociometric status. Sociometric status (likability) was assessed using one observed self-report question. Students were asked, "On a scale of 1 through 10, how much are you LIKED by your peers at school?"

3. Procedures

Students attending a middle school in southern California were asked to complete the BPRS survey as homework. Teachers were briefly trained through a one-hour faculty meeting, and then they assigned the survey to their students as homework, allowing one week to complete it. All students in the sample were told that the survey was anonymous in order to assure the confidentiality of their responses. Students were allowed to complete the survey at home or at school, during unstructured time, and received a certificate upon completion. Students were required to complete all items in order to receive the certificate. The data completed through Survey Monkey was exported into SPSS version 24 and cleaned for analysis.

4. Data Analysis Plan

      Latent Class Analysis. The first study identified four LCA models, two relational LCAs and two physical LCAs, split by gender (refer to Tables 3 through 5 and Figures 2 through 5). Across the four LCAs, there were consistent latent classes that emerged called *High Involvement* and *Low Involvement* classes. These were consistent for both types of bullying and both genders. For the relational LCA with males, there was a third class called *Defender* that emerged and for the physical LCA with males, the third class was called *Victim*. Among female students, a third class called *Defender* emerged for both the relational and physical LCA. However, the fourth class that emerged for females varied between the relational and physical LCAs. In the relational LCA, a *Victim Defender* class was identified and in the physical LCA, a *Bystander/Defender* class emerged.

      Covariates. The covariates of school climate (school effort, intervention competence, comfort communicating) and social status (likability and popularity) were included in the model using the three-step method (Asparouhov & Muthén, 2014; Nylund-Gibson, Grimm, Quirk, Furlong, 2014; Vermunt, 2010) to identify if they predict class membership in the four LCAs identified in Study 1. The three-step method is preferred for its ability to prevent auxiliary variables from influencing emergent latent classes. Specifically, once the best unconditional model is identified, latent class membership is held constant when the covariates are added, which accounts for classification error resulting from imperfect delegation of participants to classes. If covariates are added directly to the LCA models (i.e., not as auxiliary variables), the emergent classes can shift as a result of being influenced by covariates. This is because heterogeneity is being modeled in both the

covariates and the bully participant roles, which should be avoided. The three-step method is designed to prevent these shifts.

E. Results

1. Descriptive Statistics

The means and standard deviations of the school climate factors and social status components are presented in Table 6. Overall, male students yielded a higher mean on both measures of social status and on two of the three measures of school climate. However, it is important to note that these scores were only marginally different, with the exception of self-perceived popularity. Regarding perceptions of school effort to reduce bullying, male and female students received the same mean score, which was $M = 3.27$. Boys produced a higher mean score on the latent factor measuring self-perceived intervention competence ($M = 3.27$) and self-reported comfort communicating about bullying ($M = 3.08$), compared to girls ($M = 3.18$ and $M = 3.03$ respectively). With respect to social status, male students scored higher on self-perceived likability ($M = 7.84$) and popularity ($M = 6.27$), compared to female students ($M = 7.79$ and $M = 5.83$ respectively).

2. Examining Predictors of Class Membership

Several covariates were added to all four of the final LCA models identified in study 1 to help validate the classes and further explore the association between social-ecological factors and bully participant roles. Specifically, three school climate variables and two components of social status were added as covariates. This was done using the three-step method in order to account for classification error, which is the result of imperfect assignment of students to classes (Nylund-Gibson et al., 2014; Vermunt, 2010). No major shifts in class proportions or response patterns appeared after the covariates were added to

the LCAs. Tables 7, 8, 9, and 10 provide the effects of school climate and social status on the classes identified in each model. Overall, across all four LCAs, self-perceived sociometric status (likability) significantly predicted class membership. Self-perceived popularity significantly predicted class membership for male students and the physical LCA only. In terms of the school climate factors, all three components significantly predicted class membership among female students, for both physical and relational bullying. The school climate factors did not significantly predict group membership among male students for either physical or relational bullying.

Relational LCA models. Looking at male students, the *High Involvement* class was identified as the reference group to compare covariate effects across classes. Male students that endorsed lower rates of sociometric status (likability), were significantly more likely to be in the *High Involvement* class compared to the *Low Involvement* class (0.29, *p* < .05; *OR* = 1.34). Therefore, boys who perceived themselves as less liked (lower on sociometric status) were also more likely to endorse all four bully participant roles. Self-perceived level of popularity did not significantly predict class membership among male students. In addition, the school climate factors (school effort, intervention competence, and comfort communicating) also did not significantly predict male students' membership in the bully participant role classes.

When examining female students and the relational LCA, the *High Involvement* class was again identified as the reference group. Female students that endorsed higher levels of school effort (students that perceived their school as putting more effort into reducing bullying), were significantly less likely to be in the *High Involvement* class compared to the *Defender* (0.91, *p* < .01; *OR* = 2.47) and *Victim Defender* class (0.74, *p* < .05; *OR* = 2.09). In

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other words, among female students, higher perceptions of school effort was related to falling in the *Defender* and *Victim Defender* class, and therefore greater defending behaviors. Regarding intervention competence, female students that reported higher levels of intervention competence were significantly more likely to be in the *High Involvement* class compared to the *Low Involvement* class (-1.07, $p < .05$; $OR = 0.34$). Therefore, students that had greater knowledge of how to intervene when bullying occurs were more likely to fall in a group that endorsed all four bully participant roles, than a group that endorsed no roles.

The last school climate factor was "comfort communicating with adults at school about bullying." Female students that endorsed higher levels of comfort communicating were less likely to be in the *High Involvement* class compared to the *Low Involvement* class (1.21, $p < .01$; $OR = 3.36$). In other words, female students that reported greater ease of communication with adults about bullying were more likely to fall in a group that did not endorse any of the bully participant roles.

Only one components of social status, levels of likability, significantly predicted group membership for female students. Looking at relational bullying, female students who perceived themselves as less liked were more likely to be classified in the *High Involvement* class compared to the *Defender* class (-0.40, $p < .01$; $OR = 1.48$). With regard to the physical bully participant roles, girls who reported lower levels of likability had a greater chance of falling in the *High Involvement* class compared those in the *Low Involvement* class (-0.40, $p < .05$; $OR = 1.48$) and the *Bystander Defender* class (-0.40, $p < .05$; $OR = 1.48$). Finally, self-perceived level of popularity did not significantly predict class membership for female students.

Physical LCA models. Looking at male students and the physical LCA, those that were categorized in the *High Involvement* class were identified as the reference group. Male students that endorsed higher rates of sociometric status (likability), were significantly less likely to be in the *High Involvement* class compared to the *Low Involvement* (0.78, $p < .01$; $OR = 2.19$) class and the *Victim* Class (0.61, $p < .05$; $OR = 1.84$). Therefore, boys who perceived themselves as less liked (lower on sociometric status) were also more likely to be classified in the *High Involvement* group, which endorsed all four bully participant roles. Regarding popularity, boys that reported higher levels of self-perceived popularity were significantly more likely to be in the *High Involvement* class compared to the *Low Involvement* class (-0.66, $p < .05$; $OR = 0.52$) and the *Victim* Class (-0.59, $p < .05$; $OR = 0.55$). In other words, male students that perceived themselves as more popular were also more likely to be classified in the *High Involvement* group. The school climate factors (school effort, intervention competence, and comfort communicating) did not significantly predict male students' membership in the bully participant role groups.

Regarding female students and the physical LCA, the *High Involvement* class was again identified as the reference group. Female students that reported higher levels of intervention competence were significantly more likely to be in the *High Involvement* class compared to the *Bystander/Defender* class (-1.33, $p < .01$; $OR = 0.26$). In other words, students that had greater knowledge of how to intervene when bullying occurs were more likely to fall in a group that endorsed all four bully participant roles, than a group that endorsed the roles of bystander and defender. The third school climate factor, which was perceptions of school effort, did not significantly predict female students' membership in the bully participant role groups.

In terms of sociometric status (likability), female students that endorsed higher rates of likability were significantly less likely to be in the *High Involvement* class compared to the *Bystander/Defender* class (0.32, *p* < .05; *OR* = 1.38). Therefore, girls who perceived themselves as more liked were also more likely to be classified in a group that only endorsed defending behaviors, than a group that endorsed all four bully participant roles. Finally, self-perceived popularity did not significantly predict group membership among female students.

<div align="center">

F. Discussion

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Study 1 used LCA to empirically identify bullying profiles based on assuming multiple bully participant roles (bully, victim, defending, and bystander) at varying degrees. This complex phenomenon was further explored in the current study by examining how these bullying profiles relate to three components of school climate (school effort, intervention competence, and comfort communicating) and two components of social status (popularity and likability). Overall, across all four LCAs, self-perceived sociometric status (likability) significantly predicted class membership. Self-perceived popularity significantly predicted class membership for male students and the physical LCA only. In terms of the school climate factors, all three components significantly predicted class membership among female students, for both physical and relational bullying. The school climate factors did not significantly predict group membership among male students for either physical or relational bullying.

1. School Climate Factors

The school climate factors had a significant impact on bullying involvement for female students, but not male students. Regarding relational bullying, girls who endorsed higher levels of perceived school effort were more likely to fall in the *High Involvement*

class compared to the *Defender* and *Victim Defender* classes, suggesting that female students who were involved in all four relational bully participant roles also perceived their schools as making fewer efforts to address bullying. This supports previous research linking a positive school climate to increases in defending behaviors (Eliot, Cornell, Gregory, & Fan, 2010). This finding brings to light the central roles schools can play to reduce bullying involvement and increase defending behaviors. A promising intervention might involve increasing female students' awareness of the guidelines in place at school to increase defending behaviors and support victims.

Across both types of bullying (physical and relational), girls who endorsed lower levels of comfort in communicating about bullying were more likely to be classified in the *High Involvement* class compared to the *Low Involvement* class. This is in conjunction with previous research indicating trusting relationships with teachers leads to lower rates of aggression and victimization (Corrigan, Klein, & Isaacs, 2010). One possible explanation is that the assistance female students receive when discussing bullying with adults provides a support system that prevents involvement in bullying. Therefore, schools should consider increasing opportunities for girls to talk to adults about bullying, as an open line of communication might have the potential to reduce bullying involvement broadly.

The third school climate factor, intervention competence, also significantly influenced female students' classification in physical and relational bully participant roles. Looking at physical bullying, female students that scored lower on measures of intervention competence were more likely to be classified in the *Bystander/Defender* class compared to the other three classes. A reasonable explanation for this finding is that youth who bystand have less familiarity with and confidence in personally addressing bullying. With regard to

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relational bullying, female students who scored higher on measures of intervention competence were more likely to be classified in the *High Involvement* class compared to the *Low Involvement* class. This is surprising as it suggests knowing how to personally address bullying is related to greater involvement in all four bully participant roles, versus no roles. It is possible that greater social competence and knowledge of how to tackle bullying can increase involvement due to the social rewards sometimes coveted from bullying involvement. Another explanation is that when youth directly address bullying, they inadvertently become involved in multiple roles that stem from complicated social dynamics. This finding speaks to the fact that bullying is a complex phenomenon influenced by multiple socio-ecological and personal factors. In addition, this result provides further insight into the design of bullying interventions. Specifically, because girls in this study were more likely to bystand if they reported lower levels of intervention competence, bullying programs should empower girls with the knowledge of how to tackle bullying, as this might both increase defending behaviors and decrease bystanding.

Among male students, the school climate factors did not significantly relate to the bully participant roles profiles (both physical and relational). Male students' perceptions of school effort did not significantly impact what bullying group boys were classified in, and their comfort level in communicating with adults about bullying also did not significantly influence group assignment. This might indicate the male students sampled were not as responsive to the efforts put forth by the school to reduce bullying involvement. In addition, this suggests the prospect of discussing bullying with adults does not play a substantial role in preventing bullying involvement for boys. Descriptive statistics denoted that the mean score for school effort and comfort communicating was similar across gender. In other

words, male students in this sample did not report lower levels of school effort and comfort communicating. Therefore, the lack of a significant influence of these school climate factors for male students (and not female students), cannot be explained by markedly lower levels of school effort and comfort communicating. A possible explanation for the non-statistically significant impact of school climate on bullying involvement is that boys might value self-reliance and prefer to address bullying issues themselves, rather than rely on external sources of support.

The third school climate factor, the degree to which students feel competent in personally addressing bullying, also did not significantly influence male students' classification in bully participant roles. This was a surprising finding, particularly if boys are more apt to value self-reliance and address bullying themselves, because one might presume students with higher levels of intervention competence would be more likely to defend. Therefore, in terms of influencing defending behaviors, it is possible that for male students, the knowledge of how to tackle bullying plays less central compared to other socio-ecological factors, such as where the bullying takes place and who is involved.

Results from the current study suggest school climate factors may have less utility when intervening to reduce bullying among boys. Considering this, it is reasonable to posit that bullying prevention program for boys would benefit from focusing on alternative approaches to decrease victimization and increase defending. On the other hand, an alternative perspective is that bullying prevention programs might want to encourage boys to take advantage of the resources made available for them at school to address bullying. For example, open lines of communication between students and adults should be encouraged that feel more fitting for boys. Furthermore, male students could benefit from being

empowered to partake in the development of the guidelines set in place at schools to address bullying.

2. Social Status

Sociometric status (likability) significantly impacted bullying involvement for both genders and types of bullying, while popularity was only significantly related to bully participant roles for male students involved in physical bullying. Across all four LCAs, students that reported lower levels of self-perceived likability were more likely to fall in the *High Involvement* class consistently. The *High Involvement* class is the only class that endorsed the role of bully, which supported previous research indicating that youth who engage in aggressive acts are less liked by peers (Cheng et al., 2024). These findings provide convincing evidence that bullying programs should discuss with students the negative consequences associated with bullying involvement. In addition, they infer that interventions should encourage students involved in bullying to seek emotional support and help, as they might perceive themselves as less liked by peers.

Although popularity was significantly related to physical bullying involvement among boys, across both genders, popularity was not significantly related to the relational bully participant role profiles. This sheds light on the presumed social rewards often associated with youth who take on the role of bully because of their visibility and power (Camodeca et al., 2015). Despite being involved in all four relational bully participant roles, male and female students did not appear to benefit from greater notions of self-perceived popularity. Therefore, it appears the link between bullying involvement and popularity is specific to boys and, in particular, with regard to physical bullying.

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Finally, although previous research suggests defenders are consistently liked and popular (Lucas-Molina et al., 2014), the defender classes that emerged for both boys and girls in the relational LCAs were not related to higher levels of popularity. However, for female students, they were linked to higher levels of likability. Therefore, the social reward of likability among defenders only appeared among female students and in terms of the relational bully participant roles.

Male Students. For relational bullying, male students who perceived themselves as less liked had a greater probability to be classified in the *High Involvement* class, compared to the *Low Involvement* class. This further highlights potential negative consequences associated with being involved in all four relational bully participant roles (as compared to no roles). Looking at the physical bully participant roles, boys who reported lower levels of likability were more likely to be classified in the *High Involvement* class compared to those in the *Victim* class and the *Low Involvement* class. This is a surprising finding as previous research indicates youth who are victimized score lower on liking (Pouwels et al., 2015). It is possible that participating in both the roles of bully and victim was linked to students endorsing lower levels of likability, versus only being a victim of bullying.

Regarding popularity and physical bullying, male students who perceived themselves as more popular were more likely to be classified in the *High Involvement* class and therefore involved in all four physical bully participant roles. These results support previous research indicating youth who take on the role of bully are popular (Farmer et al., 2002) but highly disliked (Cheng et al., 2024). Based on the aforementioned evidence, it appears that for boys, physical aggression is a suitable avenue to achieve popularity, even at the expense of being less liked. It is also reasonable to assume that being less liked is a negative but

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necessary consequence associated with acquiring or maintaining popularity among boys, as it might require a reputation of being physically aggressive. A final alternate explanation is that some students who perceive themselves as falling short on likability have difficulty regulating these emotions and act aggressively as a coping strategy. These findings suggest bullying interventions tailored to boys should consider discussing the pros (such as social power) and cons (such as being less liked) associated with bullying involvement. Additionally, they may want to explore underlying motivators for bullying involvement and socially appropriate avenues to achieving social recognition.

Looking at popularity and relational bullying, higher levels of self-perceived popularity among boys was not significantly related to the relational bully participant roles. Therefore, it is possible that for male students, involvement in relational bullying does not offer the same social rewards that physical bullying might deliver.

Female Students. For female students, the degree to which they perceived themselves as liked significantly impacted bully participant role involvement, while self-perceived popularity did not. Looking at relational bullying, female students who perceived themselves as less liked had a greater probability to be classified in the *High Involvement* class compared to the *Defender* class. With regard to the physical bully participant roles, girls who reported lower levels of likability had a greater chance of falling in the *High Involvement* class compared those in the *Low Involvement* class and the *Bystander Defender* class. This again emphasizes the negative consequences linked to physical bully participant role involvement. In particular, the two roles not represented in the *Bystander Defender* class are that of the bully and victim. Given this, it is reasonable to assume that for girls, engaging in both physical bullying and being a victim of physical aggression leads to

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substantial internalizing issues such as viewing oneself as less liked. For female students, the degree to which they perceived themselves as popular did not significantly impact bully participant role involvement. As previously mentioned, these results suggest bullying interventions should encourage students involved in bullying to seek help and discuss with youth the deleterious outcomes linked to bullying involvement.

3. Implications

By examining perceptions of school climate and social status and how these relate to bully participant role profiles, results from the current study highlight implications that are central for the design of bullying interventions tailored to topics (variables related to school climate and social status), type of bullying, and gender.

Findings revealed that girls who reported higher levels of school effort were more likely to defend compared to girls involved in all four relational bully participant roles. In addition, evidence from the current study suggested that female students who reported lower levels of intervention competence were more likely to bystand. In combination, these results shed light on the critical roles schools can play to reduce bullying involvement and increase defending behaviors, as girls who endorsed greater recognition of school efforts to address bullying were more likely to engage in defending behaviors. Given this, interventions targeting female students would benefit from increasing female students' awareness of the guidelines in place to increase defending behaviors and support victims. Furthermore, intervention may need to focus on empowering girls with the knowledge of how to tackle bullying, as this might both increase defending behaviors and decrease bystanding.

Results from the current research indicated that female students who felt more comfortable talking to adults about bullying were less likely to be involved in all four

relational bully participant roles. This is a noteworthy finding as it implies an open line of communication with adults at school can play a central role in reducing bullying involvement among girls. Considering this, it is recommended that bullying interventions increase the opportunities made available for girls to talk to adults about bullying, such as having several designated staff available at all times to discuss social conflicts and concerns.

Among male students, the school climate factors did not significantly relate to the bully participant role profiles (both physical and relational). Therefore, bullying programs targeting boys may benefit from focusing on alternative approaches to decrease bullying, as these results suggest school climate factors have less utility when intervening with boys. Alternatively, it is equally reasonable to assume that additional efforts are needed to make school climate more effective for male students in reducing bullying involvement. In this light, bullying programs might want to motivate boys to take advantage of the resources made available for them at school to increase communication and address bullying. Examples of resources include having an adult to talk to at school about bullying or an older peer. Furthermore, male students may benefit from being empowered to take an active role in the development of the guidelines set in place at schools to address bullying.

For both genders and types of bullying (relational and physical), self-perceived sociometric status (likability) significantly predicted class membership. Consistently, students that endorsed lower levels of self-perceived likability were more likely to be involved in all four bully participant roles. Therefore, practitioners should be aware that youth exhibiting bullying behaviors may not be doing so in isolation from other experiences such as victimization or believing they are disliked by peers. This suggests bullying programs may need to focus on discussing social consequences associated with bullying

involvement, such as feeling disliked by peers. In addition, because peer acceptance is prioritized during adolescence (Farmer at al., 2011), it is recommended that bullying interventions provide students with the skills they need to acquire greater peer approval and encourage youth to seek help if they are experiencing low levels of self-esteem.

Unlike female students, male students were found to perceive a social advantage to physical bullying involvement, specifically higher levels of self-reported popularity. Several scholars have noted that adolescents prioritize popularity, dominance, and being able to impress peers (Farmer at al., 2011; Hawley, 2003; Pellegrini & Long, 2002), particularly when they transition to middle school, as social niches are increasingly important. This heightened concern for social status, power, and peer approval is frequently provided as an explanation for the increases in bullying behaviors among adolescents in middle school (Pellegrini & Long, 2002; Rodkin, et al., 2000; Rodkin et al., 2015). Paired with the current results, it is possible that the male students sampled engaged in physical aggression in an effort to impress peers and acquire salience in a milieu where social niches are valued. Given this, interventions tailored to boys should consider discussing the pros and cons associated with bullying involvement. It is important to note that discouraging boys to partake in behaviors that previously offered popularity may be challenging for school staff and off-putting for male students, especially in middle school when the prospective for social power becomes a priority. As such, interventions may benefit from focusing on alternative avenues to achieving social recognition that include a physical component, such as sports, and exclude physical aggression towards peers.

Findings from the present study provide convincing evidence that bullying interventions might be more efficacious if they target types of bullying and gender-specific

motivations and experiences. In addition, results stress the substantial impact that socio-ecological factors have on bullying involvement and emphasize the need for schools to implement school-wide bullying interventions that improve school climate. Staff members can play a vital role in this process by creating an open line of communication, creating a sense of belonging and community in the classroom, modeling desired behaviors, and supporting students demonstrating behavioral issues (Baker, 1998; Hoff, Reese-Weber, Schneider, & Stagg, 2009). In addition, by promoting appropriate norms about bullying, schools can foster prosocial behaviors and help youth involved in bullying feel supported and encourage them to seek help.

IV. Chapter 4: Limitations and Conclusions
A. Limitations

Several limitations in the administration of the survey used in this study pose threats to internal validity. Teachers were asked to have students complete the survey online as part of a homework assignment. No manipulation checks were conducted to assure teachers provided the assignment in a consistent manner. For instance, it is possible teachers used varying priming methods, which can influence student attitudes about the survey, therefore altering how students respond to the survey. Moreover, as students completed the survey for homework, researchers are unaware of the environment surrounding participants when completing the survey. Therefore, events or circumstances occurring while completing the survey may have influenced student responses. For instance, parents or peers may have observed some students complete the survey. Although the survey was a required homework assignment, some students still chose to drop out and receive an incomplete for unknown reasons. The students who did not complete the survey may be systematically different and unrepresented in our study.

Another limitation of this study is the generalizability of results to other populations. Our sample included primarily Latino/a and White 7th and 8th grade students from one middle school in a suburban location. This poses a threat to external validity, as our results may not be applicable to students in schools with different demographics, including gender, age, ethnicity, SES and levels of neighborhood crime. This is relevant as research has indicated these variables can influence involvement in bully participant roles. In addition, school climate and classroom management have been shown to influence students' participation in bullying participant roles. Therefore, these results may not be generalizable

to schools with different classroom and school-wide structures, expectations, norms, resources, programs, etc.

As self-reports were used in this study, construct validity is another limitation. Students may have interpreted the items used from the BPRS survey differently. Due to the nature of bullying questions, students may have primed themselves to respond, or react to them, in a socially desirable manner. Given this, participant answers may reflect a response bias, instead of the construct being measured. Additionally, our results may be biased as a mono-method was used – only self-reports – to assess student participation in bullying participant roles and students' perception of school climate factors and social status.

Finally, the data in this study were dichotomized, therefore we were unable detect differences in the frequency of which students participated in these roles. Different patterns may emerge after identifying students that participate in these behaviors once a month compared to multiple a times a day. In this study, students who only endorsed participating in these behaviors 1-2 times in the last month were included in latent classes along with students who may have experienced them daily. Furthermore, because we asked students to indicate their involvement in these roles during the last 30 days, our data may not accurately reflect participation in these behaviors throughout the entire year.

B. Conclusions

Study 1 found four discrete heterogeneous groups of bully participant roles. This aligns with previous research that students can endorse difference roles, including that of bully, victim, defender, and bystander. The present findings build upon previous work by demonstrating that students can assume multiple roles simultaneously and at varying degrees. In addition, this study found gender specific effects that varied according to

whether the bullying was physical or relational. Furthermore, it might be possible that students navigate between multiple roles, given fluid socio-ecological effects. Understanding these nuances can help inform the design of interventions that target the multifaceted needs of students involved in bully participant roles.

Study 2 related school climate factors and social status components to the latent groups identified in study 1. The findings converge with previous research indicating that school climate can impact the culture and prevalence of bullying, and that youth who engage in bullying are often popular but disliked by peers. The present study found that, overall, the school climate factors had a significant impact on bullying involvement for girls, but not boys, and that this impact was restricted by type of bullying (physical versus relational). Additionally, there were more effects of sociometric status (likability) on bullying involvement than effects of popularity in this study. Specifically, likability significantly impacted bullying involvement for both genders and types of bullying, while popularity was only significantly related to male students involved in physical bullying. These findings build on previous research and further suggest that the impact of socio-ecological factors on bullying is nuanced and complex, as it varied by gender and type of bullying.

Recently, bullying in schools has received increased attention by researchers, educators, as well as in the media. This has led to a heightened awareness of its deleterious impacts on individuals involved in the different roles associated with bullying. Thus, research that furthers our understanding of bullying is both timely and necessary to reduce bullying and support more positive social outcomes among students.

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Table 1

Descriptive Statistics for the Relational Bully Participant Roles Items

LCA Items	Male		Female	
Relational Bullying BPRS Items	*M*	*SD*	*M*	*SD*
Relational Bully				
I have told lies about another student	.12	.32	.09	.29
I have said bad things about another student	.18	.39	.21	.41
I have talked about someone behind their back	.20	.40	.29	.45
I have ignored another student	.45	.50	.38	.49
I have purposely left out another student	.17	.37	.13	.34
Victim of Relational Bullying				
People have tried to make others dislike me	.23	.42	.35	.48
People have told lies about me	.34	.47	.42	.49
I have been purposely left out of something	.29	.46	.36	.48
I have been ignored	.43	.50	.47	.50
Defender of Relational Bullying				
I defended someone by telling people that a rumor is not true	.40	.49	.50	.50
I tried to make people stop spreading rumors about others	.36	.48	.46	.50
I tried to include someone if they were being purposely left out	.62	.49	.70	.46
Bystander in Reaction to Relational Bullying				
I pretended not to notice when rumors were being spread about students	.39	.49	.41	.49
I pretended not to notice a situation that purposely left someone out	.22	.41	.26	.44

Table 2

Descriptive Statistics for the Physical Bully Participant Roles Items

LCA Items	Male		Female	
Physical Bullying BPRS Items	*M*	*SD*	*M*	*SD*
Physical Bully				
I have bumped into another student on purpose	.21	.41	.15	.36
I have pushed, punched, or slapped another student	.17	.38	.13	.34
I have damaged or broken something that was another student's	.09	.28	.08	.27
I have thrown things at another student	.17	.37	.16	.37
Victim of Physical Bullying				
I have had things taken from me	.32	.47	.24	.43
I have been pushed around, punched, or slapped	.27	.44	.22	.42
I have been pushed or shoved	.41	.49	.34	.47
I have had something thrown at me	.32	.47	.31	.46
Defender of Physical Bullying				
I defended someone who was being pushed, punched, or slapped	.42	.49	.41	.49
I defended someone who had things purposely taken from them	.41	.49	.40	.49
Bystander in Reaction to Physical Bullying				
I ignored it when I saw someone breaking or damaging a student's things	.20	.40	.19	.39
I pretended not to notice when a student was being pushed/punched/slapped	.23	.42	.22	.41
I pretended not to notice when things were taken or stolen from a student	.24	.43	.21	.41
I ignored it when someone else threw something at another student	.38	.49	.34	.47

Table 3

Fit Statistics for the Relational LCAs for Both Genders

Gender	Number of classes	Log likelihood	BIC	ABIC	*p*-value of LMRT	*p*-value of BLRT	Class-specific Sample Proportions					
							1	2	3	4	5	6
Male	1	-2129.47	4337.01	4292.62			100%					
	2	-1816.16	3794.02	3702.07	<.001	<.001	32%	68%				
	3	-1756.04	**3757.41**	3617.91	**0.01**	<.001	34%	21%	45%			
	4	-1720.02	3769.03	3581.97	0.09	<.001	10%	30%	44%	15%		
	5	-1695.04	3802.70	**3568.08**	0.22	<.001	12%	11%	24%	18%	34%	
	6	-1677.29	3850.84	3568.66	0.28	0.08	18%	35%	20%	4%	10%	14%
Female	1	-2558.17	5196.51	5152.11			100%					
	2	-2214.13	4594.34	4502.36	<.001	<.001	42%	58%				
	3	-2127.82	4507.61	4368.07	**0.05**	<.001	21%	40%	39%			
	4	-2082.91	**4503.70**	4316.57	0.20	<.001	19%	35%	23%	22%		
	5	-2052.36	4528.51	4293.82	0.16	<.001	17%	24%	18%	24%	18%	
	6	-2031.04	4571.78	4289.51	0.19	0.01	18%	17%	8%	17%	20%	21%

Note. AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion; ABIC = Adjusted BIC; BLRT = Bootstrap Likelihood Ratio Test; LMRT = Lo-Mendell-Rubin Adjusted Likelihood Ratio Test. Boldface indicates the preferred model for a given fit index.

Table 4

Fit Statistics for Physical LCAs for Both Genders

Gender	Number of classes	Log likelihood	BIC	ABIC	*p*-value of LMRT	*p*-value of BLRT	Class-specific Sample Proportions					
							1	2	3	4	5	6
Male	1	-2052.78	4183.58	4139.19			100%					
	2	-1718.02	3597.64	3505.70	<.001	<.001	38%	62%				
	3	-1666.90	**3578.97**	3439.47	**0.03**	<.001	57%	6%	37%			
	4	-1628.76	3586.28	3399.23	0.11	<.001	10%	24%	21%	46%		
	5	-1602.43	3617.19	**3382.58**	0.06	<.001	7%	8%	42%	21%	21%	
	6	-1584.72	3665.36	3383.18	0.31	0.20	8%	5%	13%	20%	13%	41%
Female	1	-2247.07	4574.31	4529.91			100%					
	2	-1952.12	4070.33	3978.35	<.001	<.001	23%	77%				
	3	-1881.06	4014.10	3874.55	**0.02**	<.001	48%	36%	16%			
	4	-1836.18	**4010.25**	3823.13	0.21	<.001	48%	22%	12%	18%		
	5	-1803.58	4030.95	3796.25	0.00	<.001	33%	20%	21%	14%	13%	
	6	-1777.93	4065.56	3783.29	0.11	<.001	12%	12%	18%	9%	10%	38%

Note. AIC = Akaike's Information Criterion; BIC = Bayesian Information Criterion; ABIC = Adjusted BIC; BLRT = Bootstrap Likelihood Ratio Test; LMRT = Lo-Mendell-Rubin Adjusted Likelihood Ratio Test. Boldface indicates the preferred model for a given fit index.

Table 5

Summary of Class Proportions and Counts by Gender and Latent Class

Gender	Physical Bully Participant Roles			Relational Bully Participant Roles		
	Latent Class	%	*n*	Latent Class	%	*n*
Males	Low Involvement	57	149	Low Involvement	34	89
	High Involvement	6	16	High Involvement	21	56
	Victim	37	98	Defender	45	119
Females	Low Involvement	48	148	Low Involvement	23	71
	High Involvement	12	37	High Involvement	20	60
	Victim Defender	22	66	Victim Defender	22	68
	Bystander/Defender	18	55	Defender	35	109

Table 6

Descriptive Statistics for the Covariates School Climate and Social Status

Covariates	Male		Female	
School Climate Factors	*M*	*SD*	*M*	*SD*
Perceived School Efforts Mean Score	3.27	0.74	3.27	0.65
Kids at my school try to stop bullies	2.77	0.99	2.77	0.89
Kids at my school try to help victims	2.92	0.98	2.88	0.88
Teachers at my school try to stop bullies	3.43	0.86	3.48	0.82
School doesn't tolerate bullying	3.50	0.85	3.46	0.89
School has rules that stop bullying	3.48	0.83	3.56	0.77
Teachers at my school try to help victims	3.50	0.83	3.47	0.86
Intervention Competence Mean Score	3.27	0.80	3.18	0.73
Comfortable standing up for other kids if they are being bullied	3.16	0.94	3.13	0.89
I know how to deal with bullying if it happens to me	3.36	0.86	3.21	0.86
Comfortable standing up for myself if I was bullied	3.40	0.87	3.28	0.88
I know how to help kids who are being bullied	3.15	0.92	3.10	0.90
Comfort Communicating Mean Score	3.08	0.88	3.03	0.86
Comfortable talking with teachers	2.95	1.02	2.90	0.98
Comfortable talking with family	3.14	0.99	3.17	0.99
Know how to talk about bullying with teachers	3.04	0.98	2.95	1.05
Comfortable reporting bullying to school if others were bullied	3.09	1.02	3.10	0.98
Comfortable reporting bullying to school if I was bullied	3.17	1.00	3.06	1.01
Social Status Components				
Sociometric Status (Likability)	7.84	1.92	7.79	2.02
Popularity	6.27	2.28	5.83	2.51

Table 7

Covariate Effects for Relational Bullying LCA for Males

Class	Effect	Low Involvement		High Involvement		Defender	
		Logit	OR	Logit	OR	Logit	OR
Low Involvement (34%, n = 89)	Perceived School Effort			0.09	1.09	0.24	1.27
	Intervention Competence			0.21	1.24	0.12	1.13
	Comfort Communicating			-0.04	0.96	-0.14	0.87
	Sociometric Status			**0.29**	1.34	0.15	1.16
	Popularity			-0.22	0.80	-0.15	0.87
High Involvement (21%, n = 56)	Perceived School Effort	-0.09	0.92			0.15	1.16
	Intervention Competence	-0.21	0.81			-0.09	0.91
	Comfort Communicating	0.04	1.04			-0.10	0.91
	Sociometric Status	**-0.29**	0.75			-0.15	0.86
	Popularity	0.22	1.25			0.08	1.08
Defender (45%, n = 119)	Perceived School Effort	-0.24	0.79	-0.15	0.86		
	Intervention Competence	-0.12	0.89	0.09	1.10		
	Comfort Communicating	0.14	1.15	0.10	1.10		
	Sociometric Status	-0.15	0.86	0.15	1.16		
	Popularity	0.15	1.16	-0.08	0.92		

Note. Values in boldface indicate *p* < .05. OR = Odds Ratio

Table 8

Covariate Effects for Relational Bullying LCA for Females

		Reference Class							
		Low Involvement		High Involvement		Defender		Victim Defender	
Class	Effect	Logit	OR	Logit	OR	Logit	OR	Logit	OR
Low Involvement (23%, n = 71)	Perceived School Effort			0.74	2.10	-0.16	0.85	0.01	1.01
	Intervention Competence			**-1.07**	**0.34**	-0.59	0.55	**-1.37**	**0.25**
	Comfort Communicating			**1.21**	**3.36**	**0.73**	**2.07**	0.61	1.83
	Sociometric Status			0.23	1.26	-0.15	0.86	0.24	1.28
	Popularity			-0.04	0.96	0.09	1.09	0.02	1.02
High Involvement (20%, n = 60)	Perceived School Effort	-0.74	0.48			**-0.91**	**0.40**	**-0.74**	**0.48**
	Intervention Competence	**1.07**	**2.93**			0.48	1.62	-0.30	0.74
	Comfort Communicating	**-1.21**	**0.30**			-0.48	0.62	-0.61	0.55
	Sociometric Status	-0.23	0.79			**-0.39**	**0.68**	0.01	1.01
	Popularity	0.04	1.04			0.13	1.14	0.06	1.06
Defender (35%, n = 109)	Perceived School Effort	0.16	1.18	**0.91**	**2.47**			0.17	1.18
	Intervention Competence	0.59	1.81	-0.48	0.62			-0.78	0.46
	Comfort Communicating	**-0.73**	**0.48**	0.48	1.62			-0.12	0.89
	Sociometric Status	0.15	1.16	**0.39**	**1.47**			**0.40**	**1.48**
	Popularity	-0.09	0.92	-0.13	0.88			-0.07	0.94
Victim Defender (22%, n = 68)	Perceived School Effort	-0.01	0.99	**0.74**	**2.09**	-0.17	0.84		
	Intervention Competence	**1.37**	**3.95**	0.30	1.35	0.78	2.18		
	Comfort Communicating	-0.61	0.55	0.61	1.83	0.12	1.13		
	Sociometric Status	-0.24	0.78	-0.01	0.99	**-0.40**	**0.67**		
	Popularity	-0.02	0.98	-0.06	0.94	0.07	1.07		

Note. Values in boldface indicate *p* < .05. OR = Odds Ratio

Table 9

Covariate Effects for Physical Bullying LCA for Males

|		Reference Class					
		Low Involvement		High Involvement		Victim	
Class	Effect	Logit	OR	Logit	OR	Logit	OR
Low Involvement (57%, *n* = 149)	Perceived School Effort			0.36	1.43	-0.21	0.81
	Intervention Competence			-0.25	0.78	0.32	1.37
	Comfort Communicating			0.49	1.63	0.32	1.38
	Sociometric Status			**0.78**	**2.19**	0.17	1.18
	Popularity			**-0.66**	**0.52**	-0.07	0.93
High Involvement (6%, *n* = 16)	Perceived School Effort	-0.36	0.70			-0.57	0.57
	Intervention Competence	0.25	1.28			0.56	1.75
	Comfort Communicating	-0.49	0.61			-0.17	0.85
	Sociometric Status	**-0.78**	**0.46**			**-0.61**	**0.54**
	Popularity	**0.66**	**1.94**			**0.59**	**1.81**
Victim (37%, *n* = 98)	Perceived School Effort	0.21	1.23	0.57	1.76		
	Intervention Competence	-0.32	0.73	-0.56	0.57		
	Comfort Communicating	-0.32	0.73	0.17	1.18		
	Sociometric Status	-0.17	0.84	**0.61**	**1.84**		
	Popularity	0.07	1.07	**-0.59**	**0.55**		

Note. Values in boldface indicate $p < .05$. OR = Odds Ratio

Table 10

Covariate Effects for Physical Bullying LCA for Females

| | | Reference Class | | | | | | | |
| | | Low Involvement | | High Involvement | | Victim Defender | | Bystander/Defender | |
Class	Effect	Logit	OR	Logit	OR	Logit	OR	Logit	OR
Low Involvement (48%, *n* = 148)	Perceived School Effort			0.56	1.75	0.81	2.25	0.07	1.07
	Intervention Competence			-0.46	0.63	-0.78	0.46	**0.88**	**2.41**
	Comfort Communicating			**0.98**	**2.65**	0.17	1.19	-0.34	0.72
	Sociometric Status			**0.25**	**1.28**	0.13	1.13	-0.07	0.93
	Popularity			-0.04	0.96	0.11	1.12	0.09	1.10
High Involvement (12%, *n* = 37)	Perceived School Effort	-0.56	0.57			0.26	1.29	-0.49	0.61
	Intervention Competence	0.46	1.58			-0.32	0.72	**1.33**	**3.80**
	Comfort Communicating	**-0.98**	**0.38**			**-0.81**	**0.45**	**-1.31**	**0.27**
	Sociometric Status	**-0.25**	**0.78**			-0.12	0.88	**-0.32**	**0.72**
	Popularity	0.04	1.04			0.15	1.16	0.13	1.14
Victim Defender (22%, *n* = 66)	Perceived School Effort	-0.81	0.44	-0.26	0.77			-0.75	0.47
	Intervention Competence	0.78	2.18	0.32	1.38			**1.66**	**5.24**
	Comfort Communicating	-0.17	0.84	**0.81**	**2.24**			-0.51	0.60
	Sociometric Status	-0.13	0.88	0.12	1.13			-0.20	0.82
	Popularity	-0.11	0.90	-0.15	0.86			-0.02	0.98
Bystander/ Defender (18%, *n* = 55)	Perceived School Effort	-0.07	0.94	0.49	1.64	0.75	2.11		
	Intervention Competence	**-0.88**	**0.42**	**-1.33**	**0.26**	**-1.66**	**0.19**		
	Comfort Communicating	0.34	1.40	**1.31**	**3.71**	0.51	1.66		
	Sociometric Status	0.07	1.08	**0.32**	**1.38**	0.20	1.22		
	Popularity	-0.09	0.91	-0.13	0.88	0.02	1.02		

Note. Values in boldface indicate *p*<.05. OR = Odds Ratio
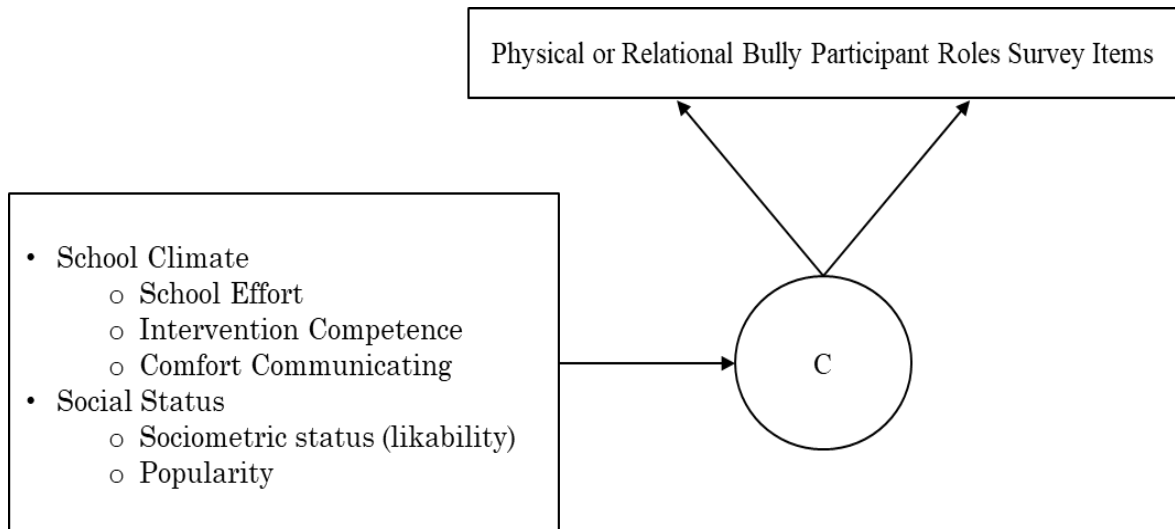
Figure 1. Conceptual diagram of the general LCA model. The model depicted was conducted four separate times: 1) males and physical BPRS items, 2) females and physical BPRS items, 3) males and relational BPRS items, and 4) females and relational BPRS items.
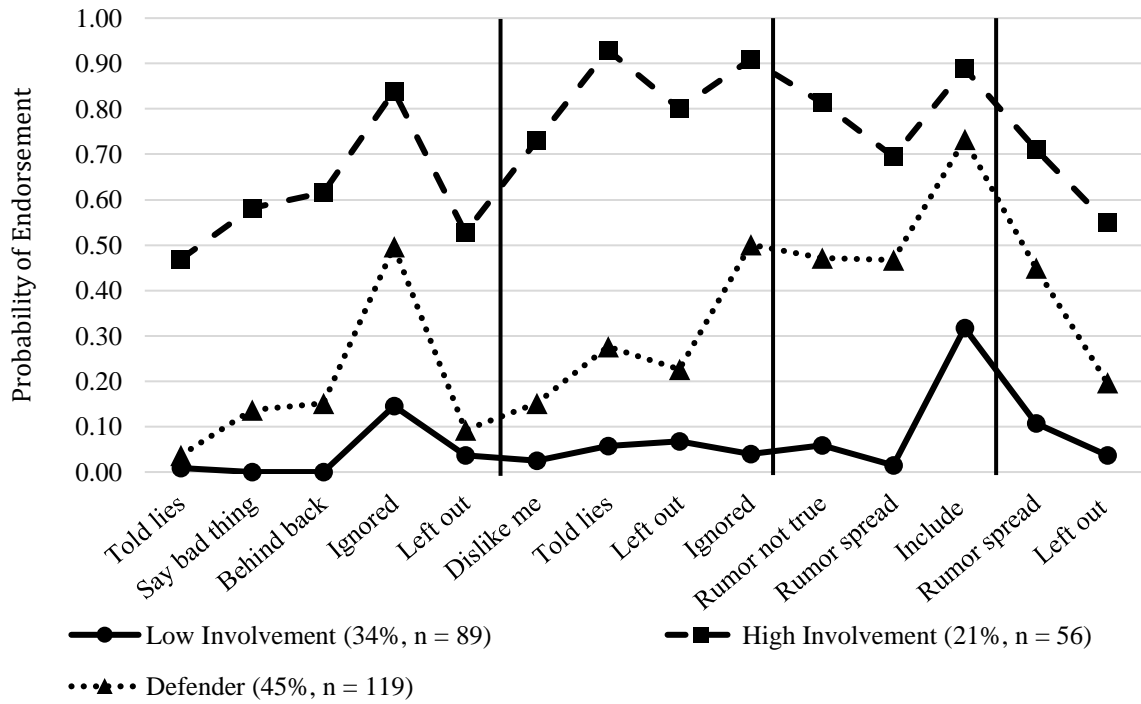
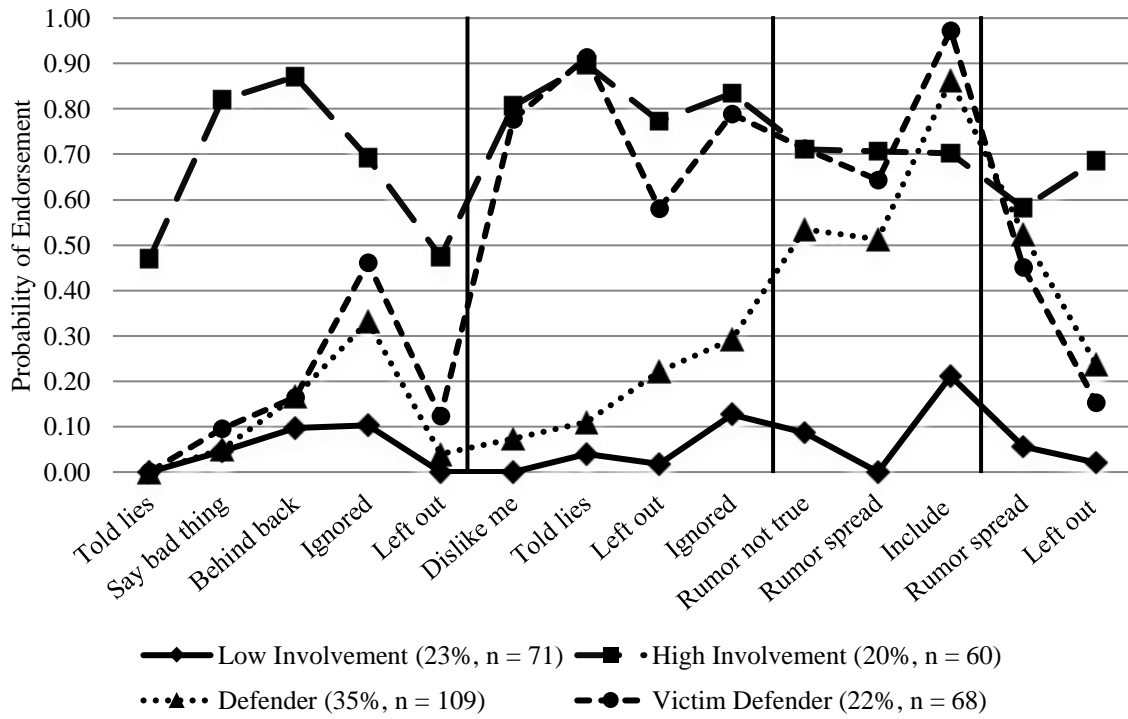*Figure 2.* Item-probability plot for the 3-class relational LCA for males.

Figure 3. Item-probability plot for the 4-class relational LCA for females.
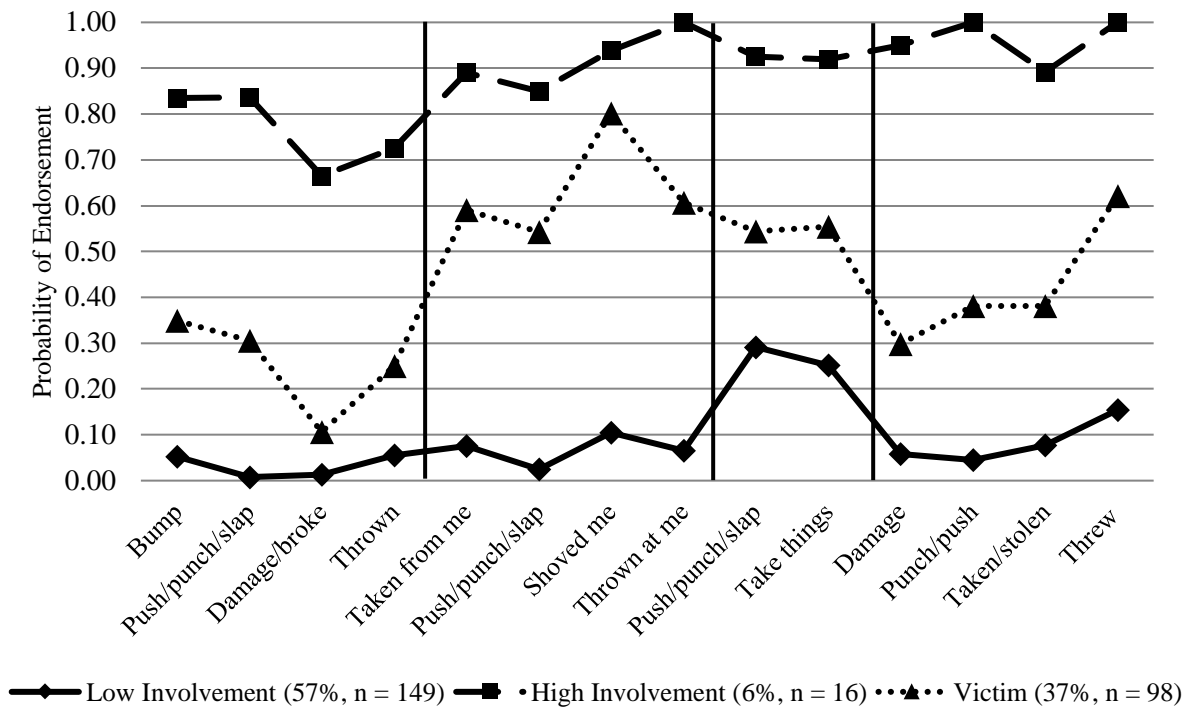
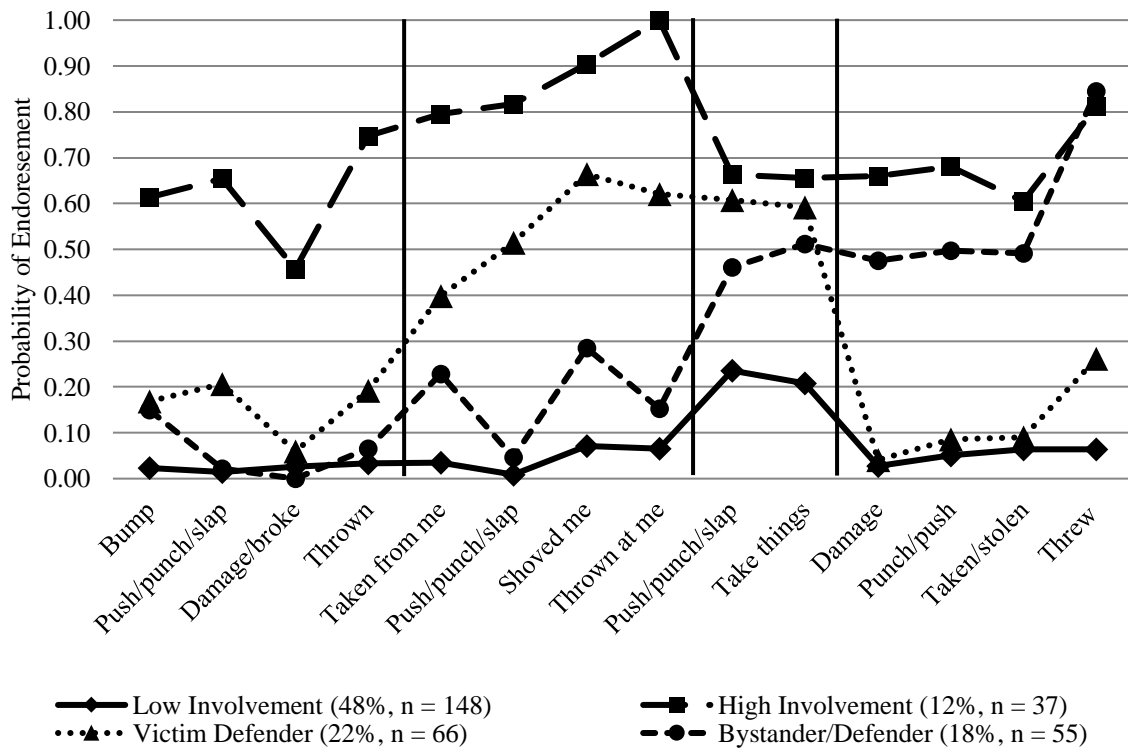*Figure 4.* Item-probability plot for the 3-class physical LCA for males.

Figure 5. Item-probability plot for the 4-class physical LCA for females.