GLOBAL SOCIAL OUTCASTING EXAMINED THROUGH A STRESS-STRAIN PARADIGM

A Dissertation

by

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ABSTRACT

This dissertation integrates the stress process paradigm with General Strain Theory and applies them to the adolescent experiences of ostracism, rejection, and interpersonal exclusion, termed referred to here as outcasting. Taking a stress proliferation approach, it is proposed in the current study that the outcasting adolescents experience in one social domain of their lives penetrates into other social domains, creating the perception of widespread outcasting throughout their social network, or Global Social Outcasting. Global Social Outcasting, then, is the catalyst in a stress-strain paradigm that triggers the experience of negative emotions, anger and anxiety in the current study. These negative emotions are proposed to be associated with nonviolent and violent delinquency as outcomes. This study uses data from the Kaplan Longitudinal and Multigeneration Study with sample size of 2,923 males and 2,839 females all aged 11 to 17 years. Using a confirmatory factor analysis approach to variable construction, Global Social Outcasting is a second-ordered latent construct that's influence is examined through gendered structural equation models followed by multiple group analysis to investigate differences in genders. Comparing gender differences in emotional responses to Global Social Outcasting, indicates higher total levels of negative feelings reported for males, compared to females. Global Social Outcasting experienced by males is positively associated with nonviolent and violent delinquency indirectly through anger, but despite effects being in the expected direction, there is no such significant association for female adolescents. Global Social Outcasting was not expected to have an influence on

delinquency through anxiety. However, results indicate a significant indirect influence of Global Social Outcasting on nonviolent delinquency through anxiety in a negative direction, suggesting that anxiety may act as a buffer to adolescents engaging in nonviolent delinquency, but this association is only significant for males when examining violent delinquency as the outcome.

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CHAPTER I

INTRODUCTION

Investigating the effects of ostracism, rejection, and interpersonal exclusion is a particularly important topic of research in today's political, criminal, healthcare, and educational climate. The Surgeon General finds social rejection to be a more significant predictor of youth violence than even gangs, poverty, and drugs (Leary, Twenge and Quinlivan 2006) and "systematic analyses of mass violence in schools suggest that perpetrators experienced (or at least perceived) chronic ostracism by their peers, teachers, and perhaps others in the larger community" (Wesselmann, Ren, and Williams 2017). While school shootings are relatively rare (Winegard and Ferguson 2017), ostracism is very common among individuals, occurring physically, socially, or in cyber interactions (Wesselmann, Ren, and Williams 2017). Ostracism hurts, even when individuals are rejected by widely despised groups, such as the Ku Klux Klan (Gonsalkorale and Williams 2007). To be clear, most who are ostracized do not react with mass violence (Williams 2001), but chronically ostracized individuals – those excluded and ignored – are more likely to respond with aggression (Anderson and Bushman 2002).

Humans have an innate desire to establish and maintain social bonds and connections with others (Blackhart, Nelson, Knowles, and Baumeister 2009). Rawls (1971) argues that while each individual may have his or her own life plans and goals, they share similar needs and interests that are advanced by cooperation with each other,

thus is the basis of the social contract. In the time of early humanity, man would have had to cooperate with one another for survival – hunting larger animals for greater amounts of food was more likely to be successful in groups of individuals – form a mechanical solidarity (Durkheim 1973). An individual experiencing ostracism, or banishment, at this time would have difficulty providing for himself, a condition that would certainly expediate his death. Though no longer needed for physical survival in modern times, social ostracism still poses a great threat to the individual. Social ostracism and rejection threaten an individual's basic need for belonging, self-esteem, control, and meaningful existence (Williams 2007).

An individual feeling outcast by those with whom he or she wishes to be close with can have a stigmatizing effect on the individual. It seems there are two possible reactions available those experiencing such an event. Either he or she fortifies efforts to address the exclusion and regain inclusion, or he or she takes the opposite path and responds with possible identity-validating maladaptive behavior (Steinbeck 1987/1945 in Williams 2007). However, these reactions may not be as dichotomous as originally thought. Williams argues there are three stages of reactions to ostracism – reflexive, reflective, and resignation. The reflexive stage is the immediate stage that occurs during or immediately after the experience of ostracism and includes feelings of hurt and emotional pain (Williams 2007). This stage is the initial stage that should signal an alarm to the individual that something is not right with this social interaction. Following this stage is the reflective stage. During the reflective stage the individual responds in one of several manners – fight, flight, freeze, or tend-and-befriend (Williams 2007) –

that are designed to address the threatened need (Williams and Zadro 2005). There are several individual and situational moderating factors that can influence this response (Williams 2007). The last stage of reaction to ostracism, rejection, or interpersonal exclusion is acceptance and likely occurs due to depleted coping resources from multiple or persistent experiences of exclusion (Williams 2007).

Similarly, Lemert (1951) proposes a sequence of primary and secondary deviance, often applied to labeling and stigmatization, in which the individual may experience an initial event of deviance in which he or she incurs no significant consequences. However, this deviance may then lead to additional deviant behaviors, which gradually garner more severe consequences, including stigmatization of the individual, until the individual accepts the categorization of his or her self as a deviant. Considering these two paradigms in unison, for example, if an individual effectively addresses an initial experience of ostracism and regains acceptance, he or she is likely to suffer no additional consequences. However, if unable to successfully address the ostracized condition, he or she may be subject to additional experiences of ostracism until he or she accepts the ostracized condition.

Terminology and Definitions

Ostracism, rejection and social exclusion have fairly considerable overlap and are often used interchangeably (Williams, Forgas, Von Hippel, and Zadro 2005) as theoretical and empirical differences between the terms have yet to be articulated within the literature (Ren, Wesselmann, and Williams 2018). While Ostracism and rejection both have their own definitions, the definition for social exclusion is sometimes a varied

cacophony of descriptions and classifications. For clarity, in this research the term *interpersonal exclusion* is used to refer to the specific micro-level concept of being kept apart from other individuals (but not ignored) or from a specific interpersonal networks and is differentiated from other forms of exclusion such as *institutional exclusion*, which refers to groups of people that excluded from social institutions.

Ostracism and rejection are sometimes definitionally positioned under the umbrella of *social exclusion*, collectively referring to all three concepts (Wesselmann, Ren, and Williams 2017; Ren, Wesselmann, and Williams 2018). Social exclusion may also describe all phenomena in which an individual is denied social contact or is involuntarily placed in a state of being alone (Blackhart et al. 2009). Social exclusion is additionally used to describe a specific concept or experience – that of not being included within a certain network, but not necessarily ignored (Williams, Forgas, Von Hippel, and Zadro 2005) –in which an individual may similarly be categorized as an out-group member compared to an in-group member (Hogg, Terry, and White 1995; Bernstein, Sacco, Young, Hugenberg, and Cook 2010). Using a single term to refer to both a specific interpersonal concept and a combination of multiple interpersonal concepts promotes confusion.

Compounding this complexity, in addition to referencing interpersonal experiences and circumstances, *social exclusion* is also used in other literature to describe the exclusion of groups of people focusing on status attainment, homelessness, political disenfranchisement, health care, incarceration, and the broad range of collateral consequences of parental incarceration (Foster and Hagan 2007; Foster and Hagan 2009;

Foster and Hagan 2015; Foster and Hagan 2016). Although Williams and colleagues (2005) version of social exclusion may still have definitional power at the group-level – individuals effected by this form of exclusion are disqualified, rejected, or segregated from particular networks (or social institutions) – they are not necessarily ignored or denied social contact and therefore, have distinct definitions. Further, the employment of an institutional framework of exclusionary mechanisms imposes theoretical paradigms distinct from interpersonal exclusion literature, resulting in differing implications for research. The current research emphasizes a framework focused on the proliferation of interpersonal exclusion, ostracism, and rejection.

Williams (2007) argues that when an individual experiences ostracism, rejection, or interpersonal exclusion he or she detects this experience, signaling an alarm that alerts the individual to focus his or her resources towards addressing this condition. Similarly, *perceived social isolation*, more colloquially known as loneliness, is theoretically constructed as a cognitive process in which the pain of loneliness signals an alarm alerting the individual to the weakening of connections with others, motivating the repair and maintenance of these connections (Cacioppo and Hawkley 2009).

Perceived social isolation differs from social disconnectedness, or objective social isolation (Cacioppo and Cacioppo 2014), in that social disconnectedness is characterized by lack of contact with others and perceived social isolation is exemplified by an individual's perception that his or her interpersonal relationships are of inadequate quality compared to the quality of relationships one desires (Cornwell and Waite 2009). Therefore, an individual who suffers ostracism, interpersonal exclusion, or rejection,

experiences an increase in the disparity between the perceived quality of interpersonal relationships and the quality in which he or she desires. The experience of ostracism, interpersonal exclusion, or rejection initiates the weakening of social connections with other, or perceived social isolation.

Ostracism refers to being ignored and excluded (Ren, Wesselmann, and Williams 2018), the act of social banishing (Sias 2009), or targeted refusals of social interaction (Blackhart et al. 2009). Williams (2007) argues that ostracism has effects and implications that extend beyond those of interpersonal exclusion and rejection. According to Williams and colleagues (2005) rejection requires an explicit verbal or physical action that declares the individual is not wanted as a member within a relationship or group, but Bernstein and colleagues (2010) argue that the refusal of social connection can be either implicit or explicit.

A social outcast is an individual who has suffered ostracism, rejection, interpersonal exclusion, or any combination of these (Williams et al. 2005; Wesselmann et al. 2017; Ren et al. 2018). Sias (2009) differentiates an *outcast* from an *isolate* in that a social group actively targets an outcast, intentionally isolating the individual, whereas the isolation suffered by an isolate occurs unintentionally.

The experience of becoming a social outcast, that is being targeted by social groups for intentional isolation (Sias 2009), ostracism, rejection, interpersonal exclusion (Williams et al. 2005), and all forms of interpersonal exclusionary phenomena (Wesselmann et al. 2017; Ren et al. 2018), is referred to in the current research as *Social Outcasting*. Social Outcasting is defined as the implicit or explicit action of designating

an individual or group to the category of outsider in relation to any ingroup through physical, verbal, or nonverbal expressions of exclusion that seek to prohibit an individual from any interpersonal interaction, group, relationship, or network.

Theoretical Introduction

In his initial conceptualization of General Strain Theory (GST), Agnew (1992) defines strains as being related to negative relationships with others. Pearlin (1989) describes how roles occupied by individuals in society, delineated by one's position within the social structure, create the potential for stress derived from enduring relations with others characterized by threat and conflict. It is clear from both theorists, that as social beings, the interpersonal relationships we encounter daily may supply a cornucopia of dynamic stressful experiences.

Strains related to goal blockage and negative treatment, such as ostracism, which are predicted to be associated with a higher likelihood of delinquency and criminality, have also received little attention (Agnew 2001). Adolescents have not had the same life experiences, opportunity to mature, or time to mentally develop as their adult counterparts, making them a population of individuals highly susceptible to strain, maladaptive emotional responses, and negative behavioral and mental health outcomes.

Merely being adolescent limits the coping strategies available to this vulnerable population (Agnew 1985). For example, an adolescent experiencing strain, that is, events or conditions that are disliked, such as ostracism or rejection, may be more likely to experience goal blockage in their efforts to escape or evade the aversive situation as their life is structured around parents, teachers, and other social institutions. The

interlocked nature of this social structure also promotes the propagation of strains across social domains. This distinct susceptibility in adolescents makes studying that population increasingly important to increase understanding surrounding the mechanisms that both facilitate and impede maladaptive responses to stress. Experiencing strain through ostracism also impedes establishing personal and institutional social bonds which has been shown to increase the likelihood of crime and delinquency (Hirschi 1969; Sampson and Laub 1993).

The prevention of adolescents leaving or avoiding outcasting at school or home combines goal blockage, negative treatment from others, and damage to social bonds resulting in increased susceptibility for those experiencing such a situation to engage in delinquent and criminal behavior. Further, when viewed as a developmental phase of the life course, adolescents who engage in criminal and delinquent behavior as responses to strain, are at an increased risk for experiencing further cumulative disadvantage (Hagan and Foster 2003). As such, it is reasonable to select the early adolescent experience of perceived social isolation operationalized through poor relations with parents, peers, family, teachers, and siblings as the focal strains and stress for the current study.

Stress is a part of daily life. Everyone experiences stressful situations and circumstances at some point. "Stress is not about unusual people doing unusual things and having unusual experiences" (Pearlin 1999:396). Rather, stress can be a dynamic process involving an ever-changing array of stressors that arise, recede, and are sometimes combined with other stressors. The way in which an individual reacts to

stress is influenced by several factors including one's own self-control, gender, neighborhood of residence, and even the catalytic strain itself. For example, while males are more exposed and vulnerable to agentic stressors, or stressors that impact individuality and autonomy, females are more susceptible to communal stressors, that is, stressors that threaten relationships or involve other people (De Coster 2005). Each gender also responds to these stressors differently (Aneshensel, Rutter, and Lachenbruch 1991) with males more likely to respond with law violation and females with depressive symptoms (Broidy and Agnew 1997).

Further, an individual's level of impulsivity, or lack of self-control, may result in the inability to resist the impulse to aggress against another who is perceived to have committed a wrong-doing against the individual (Finkle and Campbell 2001 in Leary et al. 2006). These differences are further compounded by the distinct social structural limitations of resource available to the individual, regardless of gender (Pearlin 1989). Neighborhoods, and even social networks, are often homogenous in composition, creating disadvantaged access to resources for addressing strains and stress (Aneshensel and Sucoff 1996; Pearlin 1999). The elements highlighted above are indicative of the complex and dynamic nature of stress (Pearlin 1999).

Stress proliferation is a concept located within the stress process paradigm and suggests that when individuals experience stress in one social domain, that stress can swell into other stressors that expand into other social domains (Pearlin 1989; Pearlin, Schieman, Fazio, and Meersman 2005). Individuals reside in a world with a complex network of social relationships and institutions that often overlap in spheres of social

activities. While the individual may hold a variety of roles in different social domains, the individual is still a single entity (Pearlin 1999). The inability to segregate the stress associated with a particular role, such as outcasting, from other roles held by the individual facilitates the experience and proliferation of stressors (outcasting) in other social domains (Pearlin, Aneshensel, and LeBlanc 1997). This is particularly applicable to adolescents given their interlocking structure of their social environments. When Social Outcasting is perceived to proliferate into multiple social domains of an individual's life concurrently, the experience is characterized as global in nature and referred to here as Global Social Outcasting (GSO).

According to GST, an individual experiencing a strain, or stressor, is likely to experience subsequent negative affective states, such as anger or anxiety, creating pressure for corrective action (Agnew 2006). Anger, particularly in response to strain, is the principle emotion suggested to facilitate delinquent behavior (Agnew 1992). Strains are not always met with anger or frustration but may generate apprehension or anxiety instead (Agnew 1992, 2001). Regardless of whether the emotion of anger or anxiety is activated, not everyone who faces challenges in life reacts similarly. Some individuals may address these strains and emotions through a variety of legal coping mechanisms. In addition to (or in the absence of) legal or healthy responses to stress and emotions, some individuals may choose to engage in delinquent behavior, turn to substance use, or express depressive symptoms (Agnew 2006).

Overview of the Current Research

The current research employs a new and unique measure of strain by utilizing several separate measures of ostracism, rejection, and interpersonal exclusion combined through the application of a second-order confirmatory factor analysis, to construct a hypothesized measure of an overall latent construct of perceived GSO. This is a conception and measurement method of strain that has not been employed in previous literature.

The method by which GSO is operationalized does not permit analysis that includes distinct stages of reaction to ostracism, rejection, and interpersonal exclusion depicted by Williams (2007), nor does it allow for measurement that isolates into separate categories ostracism, rejection, and interpersonal exclusion. Rather, it allows for the incorporation of all stages of reaction and posits a theoretical paradigm that conflates ostracism, rejection, and interpersonal exclusion across a variety of interpersonal social environments or domains. That is, a higher level of GSO is related to more advanced stages of reaction to and proliferation of ostracism, rejection, and interpersonal exclusion.

Mentioned earlier, the structure of adolescent social networks is such that each social domain is interlocked with other social domains. For example, the adolescent's teachers interact with his or her parents, his or her peers are often known by the parents, parents of adolescent friends often interact with each other, many times the siblings of adolescents interact with or are exposed to the adolescent's friends, and the adolescent's peers will inevitable have other friends that are peers of the adolescent as well. Given

the interlocking nature of these social domains, outcasting experienced in a single social domain may have an effect in many other social domains, much in the way stress proliferates from primary stressors in one social domain to secondary stressors in another social domain (Pearlin 1989; Pearlin, Aneshensel, and LeBlanc 1997; Pearlin 1999; Pearlin et al. 2005). It is this interlocking nature of adolescent social networks that compels the importance of using second-order confirmatory factor analysis to create a construct of perceived GSO that measures the adolescents overall experience with interpersonal ostracism, rejection, and exclusion.

Through the use of structural equation modeling, this study integrates GST and the stress process paradigms through a sequential process, evaluating the contemporaneous influences of early adolescent perceived GSO on violent and nonviolent delinquency as consequential processual outcomes manifest through negative affective states, specifically those of anger and anxiety, while controlling for a myriad of influential elements. Controlled for in the analysis of contemporaneous effects are several elements found to have processual influence on delinquency or negative emotions including perceived neighborhood problems, race, socioeconomic status (Pearlin 1989), delinquent peers (Agnew 2013), and impulsivity (Twenge 2005). The importance of gender differences in the stress and strain paradigms compel the need for gendered analysis (Agnew and Broidy 1997; Aseltine, Gore, and Gordon 2000; Hagan and Foster 2003; De Coster 2005; De Coster and Zito 2010; Foster and Hagan 2013).

The results of this study increase information surrounding adolescent experiences of stress and expand understanding related to sources of adolescent violent and

nonviolent delinquency, providing valuable aid for an international audience of criminal justice personnel and educational administrators. The second chapter provides a brief review of theories fundamental to the current project, beginning with the stress process followed by GST. After a general overview of the stress-strain paradigm, chapter 2 further elaborates on the processual elements involved in the stress-strain paradigm beginning with a detailed review of strains and stressors themselves, followed by negative affective states, and finishing with a discussion on gender, and an explanation of control variables.

Chapter 3 then proposes a theoretical basis for becoming an outsider through outcasting and the proliferation of outcasting into a global experience. Following the theoretical framework for GSO, Chapter 3 then proceeds to the empirical analysis used for creating the second-order gendered construct of GSO, finishing with gendered structural equation models evaluating the influences of social correlates on GSO and a discussion regarding the interpretation of these results.

The full structural equation model is put forth in Chapter 4 in which the empirical analysis conducted in Chapter 3 is extended to evaluate the influences of GSO on violent and nonviolent delinquency through a path of anger and anxiety, or negative affective states, while controlling for the social correlates previously examined. Lastly, Chapter 5 finishes this dissertation with a holistic summary of the empirical results from Chapter 3 and Chapter 4, followed by a discussion regarding the implications and conclusions reached from these results, and concludes with suggestions for future research.

CHAPTER II

LITERATURE REVIEW

This chapter begins by laying out the theoretical foundations, first of the stress process paradigm, then followed by General Strain Theory (GST), a theory extended from the stress literature (Agnew 1992). After elaborating on the overall tenants of the stress process and GST, the chapter then transitions into elucidation on the detailed processual elements that are involved throughout the stress-strain paradigms. The first of these elements is the conceptualization and explanation of strains and stressors from each of the paradigms, including stress proliferation. Following the expansive section on strains and stressors, the experience of negative emotions is discussed through GST finishing with a brief discussion regarding gendered differences in emotions and vulnerability. The next section expands on the gendered differences in reactions, emotions, outcomes, and exposure to stressors and strains. A short discussion regarding the rationale for the social correlates (control variables) analyzed in this dissertation followed by a summation finishes this chapter.

Theoretical foundations

The Stress Process

Three central domains in research concerning stress, sources of stress, mediators of stress, and manifestations of stress, are linked together to construct the stress process (Pearlin, Menaghan, Lieberman, and Mullan 1981). Stress is not abnormal; it is an ordinary part of life originating in the social world and dynamic in nature (Pearlin 1999).

The source of stress can be from discrete life events or chronic occurrences (Wheaton 1980; Thoits 1994; Thoits 2010) and is influenced by the magnitude and frequency of events (Thoits 1987; Foster, Nagin, Hagan, Angold, and Costello 2010).

According to the stress process paradigm, when individuals encounter negative life events or experience chronic strains there is an impact on that individual's likelihood of experiencing depressive symptoms (Pearlin et al. 1981). Encountering negative life events or chronic strains impacts mental health indirectly through increased role strains and decreases in mastery and self-esteem (Pearlin et al. 1981). Pearlin and colleagues (1981) address the issue of whether decreases in self-concept, operationalized as a combination of mastery and self-esteem, are intrinsically related to increases in depression, using empirical evidence to support the independent variation of these concepts. Additionally, the social psychological features of social support and coping mechanisms serve to protect individuals from the consequences of stressful experience. Pearlin et al. (1981) specify that these intervening factors can disrupt the stress process at several junctures including before a negative life event, between the event or strain and ensuing stress, between the experience of stress and the deterioration of the self-concept, or prior to the stress outcome.

There are several key assumptions about the stress process. First, the multitude of elements capable of impacting individual's stress and well-being are interrelated (Pearlin 1999). An individual's social status, exposure to stressors, stress-responding resources, and the way in which stress is manifest all converge, creating a web of interconnectedness. The nature of their interconnectedness also implies that changes in

one element can produce changes in others (Pearlin 1999). Stress does not always involve distinct events and responses. "Instead, they may entail the many factors that over time can connect the inner lives of individuals to the larger social systems of which they are a part" (Pearlin 1999:396). Second, drawing on Durkheim's perspective regarding suicide and Merton's conception of anomie, stress is not abnormal but rather is the consequence of social relations. It typically involves well-socialized individuals, living their daily lives, with widely shared values and commitments (Pearlin 1999).

Stress is found in the social world and is a part of everyday life (Pearlin 1999). People do not live in vacuums, but rather occupy positions in a hierarchically structured society (Pearlin 1989) such that status creates inequalities in power, prestige, and privilege (Pearlin 1999). Situated within these social structures there are systems of stratification, such as race/ethnicity, class, gender, and age prevalent across varying societies (Pearlin 1989). These systems, regardless of intent, distribute life chances unequally (Bonilla-Silva 1997; Pearlin 1999). An individual's status within society, based on the above characteristics, has the potential to influence the structure and experience of their daily lives (Pearlin 1999). "To the extent that these systems embody the unequal distribution of resources, opportunities, and self-regard, a low status within them may itself be a source of stressful life conditions" (Pearlin 1989:242). Aneshensel and Sucoff (1996) find a strong association between well-being and individual's positions within a stratified system. They found that in Los Angeles, a city that is stratified by socioeconomic status and segregated by race and ethnicity, youth experiences are structurally associated with living in these neighborhoods, particularly

with perceiving the neighborhood as threatening. Adolescent exposure to "ambient hazards" was negatively associated with mental health. This means that as perceptions of the neighborhood as threatening increase, depressive symptoms, conduct disorder, and anxiety also increase (Aneshensel and Sucoff 1996).

Pearlin (1989, 1999) also emphasizes the sociological nature of the stress process by elaborating on the interrelated levels of the social structure and the function of social roles, statuses, and relationships in the stress process. Within social institutions are statuses and roles that are accompanied by conditions and expectations that shape one's experiences within these roles and statuses (McCall and Simmons 1978; Pearlin 1989). The role or status possessed by an individual is organized into a salience hierarchy (Stryker 1980) making some roles more prominent than others based on the situation (Pearlin 1999). An individual might be able to escape the achieved role of co-worker, but ascribed statuses – those one is born with – such as black or white, male or female, are not as easily escaped. These roles typically exist over time, shaping an individual's associated experiences, making them an enduring characteristic of one's life (Pearlin 1989, 1999). "The structural contexts of people's lives are not extraneous to the stress process but are fundamental to that process" (Pearlin 1989:242) because rarely is one's role within an institution isolated from all social contact. Rather, roles and statuses are performed in concession with other social actors as part of a larger network of roles (or role sets), thereby creating important and enduring relationships (Pearlin 1999). Because of the stable and enduring nature of these roles, relationships, and statuses, experiences

that are perceived as problematic, threatening, or are filled with conflict, can produce a significant level of stress.

General Strain Theory

Strain, originally conceptualized as "relationships in which others are not treating the individual as he or she would like to be treated" (Agnew 1992:48), is, in newer literature, simply defined as the experience of "events or conditions that are disliked by individuals" (Agnew 2006:4). The idea central to General Strain Theory (GST) is that when an individual encounters strain, he or she experiences a wide range of negative affective states, such as anger or anxiety (Agnew 2006). Experiencing negative affective states resulting from strain creates pressure for corrective action (Agnew 1992, 2001). To cope with the experience of strain and subsequent negative affective states (Agnew 2006), individuals may feel pressured to engage in delinquent behavior (Agnew 1992) to reduce or escape the strain (Agnew 2001, 2006). Agnew (2006:58) also suggests that experiencing negative affective states resulting from strain "reduce the ability to engage in legal coping, reduce the perceived cost of crime, and create a disposition for crime."

The perception of strain is an important aspect to consider when empirically testing General Strain Theory (Agnew 2001). Objective strains are strains for which there is a consensus among most groups of people that these experiences or life events are disliked whereas subjective strains are specific to those experiencing the event or condition (Agnew 2006). The experience of subjective strains is more closely associated with the reactive experience of negative affective states because subjective strains pertain more to an individual's perception of an event or condition (Agnew 2001). Due

to the dynamic nature of people's perceptions, individuals experiencing the same level of a subjective strain may perceive the strain differently, thereby eliciting different emotional responses (Agnew 2001, 2006). Even when two individuals experience and perceive an identical subjective strain in exactly the same manner, their emotional responses may drastically differ.

While GST, by definition, is engineered to be a general theory with broad application, findings in the stress literature suggest causal pathways linking particular stressors to specific emotional and behavioral outcomes (Aseltine, Gore, and Colten 1998; Aseltine and Gore 1993). Limited research has been conducted in response to Agnew's (2001) concerns regarding the use of key strains, but the research that has been completed shows promising results (see Baron 2004; Moon, Blurton, and McCluskey 2008; Moon, Hays, and Blurton 2009; and Moon, Morash, McCluskey, and Hwang 2009).

Processual Elements

Strains and Stressors

Mentioned earlier, in addition to the stress inherent within certain conditions and events, the "status characteristics" associated with individual's position within the social structure of society may increase one's risk of exposure to other stressors (Kanner, Coyne, Schaefer, and Lazarus 1981; Pearlin 1989, 1999; Pearlin and Skaff 1995; Aneshensel and Sucoff 1996). Status characteristics are attributes that differentiate individuals (gender, race, etc.) for which there are widely accepted cultural connotations indicating social worthiness with one category of an attribute (men) over another

(women) (Ridgeway and Correll 2006). There is a difference between life events and chronic stressors. Life events, by the definition of events, has a specific place in time the event occurred (Pearlin 1999) whereas chronic strains typically emerge more subtly, last longer, and are more persistent (Pearlin 1989).

Pearlin notes that while some research has focused on life events as "coextensive with the entire universe of stressors" (1999:400), conversely, life events are incidents that are likely fueled through a pathway of chronic strain. This is not to say that life events cannot be exempt from chronic strains, but that careful attention must be paid in identifying negative life events. Life events indeed have the power to disrupt an individual's life (Pearlin 1999), particularly when they are associated with changes that are undesirable (Pearlin 1989) or unscheduled (Pearlin 1980). Additionally, traumatic events are distinguishable from other events by their sudden onset and magnitude of effect on the individual experiencing the trauma (Pearlin 1999). These events, while they may be short in nature, tend to have lasting effects. Langner and Michael (1963) found that childhood traumas can have profound effects extending well into adulthood (as cited in Pearlin 1999).

The concept of stress proliferation in the stress process paradigm dictates that if an individual is exposed to a serious stressor, it is likely he or she is also exposed to other stressors. One strain, for instance, job loss, often leads to other strains, such as financial struggles, and may be a catalyst for the onset of chronic strains like marital discord (Pearlin 1989). The initial stressor encountered by an individual is referred to as a primary stressor. Secondary stressors are those stressors that are product of the initial

stressor (Pearlin 1989). The terms primary and secondary do not delineate that one is more important or harmful than the other, but rather serve as a temporal ordering mechanism, illustrating the sequential and dynamic process of stress (Pearlin 1999; Pearlin et al. 2005).

Stress proliferation occurs because people occupy various social roles within society in which is the inherent proximal and temporal partitioning from other social roles (Pearlin 1999). Each role involves interacting with a variety of other people, but the central actor is still a single individual, typically plagued by the inability to compartmentalize the stressors encountered in one role from the other roles or social environments that encompass his or her social universe (Pearlin, Aneshensel, and LeBlanc 1997; Pearlin 1999). "The structure of experience in one domain comes to structure action in another domain" (Pearlin 1999:404) meaning that one's experience, or reaction to, strain in a given environment may carry over into other settings. For example, an individual experiencing conflict with a co-worker at work may act antagonistically with an affectively close other at home. Because the social structural position one holds in society often influences his or her experience of stressors, it is reasonable to infer these systems of inequality that contributed to the initial stressor also contribute to secondary stressors (Pearlin et al. 2005).

GST separates strains into three categories - those that block individuals from achieving positively valued goals, the loss of positively valued stimuli, and the presentation of negative stimuli. Strains are most likely to result in crime when they are

seen as unjust, high in magnitude, are associated with low social control, or create pressure or incentive to engage in criminal coping (Agnew 2001).

Strains seen as unjust or unfair "[involving] the voluntary and intentional violation of a relevant just norm" (Agnew 2001:329) are characterized by the belief that the strain is undeserved and is most likely to elicit anger, resulting in this strain to be particularly associated with a higher likelihood of delinquent behavior.

Since the severity and magnitude of a strain is largely based on an individual's perception, this type of strain is influenced by set of complex factors including frequency, duration, centrality, and recency of the experience. Those strains that are high in magnitude or severity are likely to cause delinquency because they typically limit the individual's ability to address the strain while lowering the cost of criminal activity. Strains that are longer in duration, higher in frequency, that are unresolved, and are more recent are expected to have greater negative impacts on an individual. Centrality refers to strain that "threatens core goals, needs, values, activities, and/or identities" Agnew 2001:335).

Strains that are associated with low social control are more likely to be associated with criminality and delinquency because the cost of criminal coping is low (Agnew 2006). This type of strain is also thought to be associated with a low quality of social bonds (Baron 2004). Strains that create pressure to react in a criminal or delinquent manner are also more likely to produce delinquency and criminality. The physiological distress of strain may result in individuals using crime or drugs as a coping mechanism (Agnew 2001; Brezina 1996). The use of drugs in response to strain allows the

individual the opportunity to avoid, escape, or compensate for the negative effects of strain. The use of crime as a coping mechanism provides the victim of strain the opportunity for vengeance against the perpetrator (Agnew 2001; 2006).

Strains that are unresolved, longer in duration, and that frequently occur have a greater impact on the individual (Agnew 1992). These strains are referred to as chronic (Agnew 2001) or repeated strains (Agnew 2006). Chronic strains are more likely to be associated with delinquency because they contribute to negative emotion traits, which is distinct from negative emotional or affective states in that negative emotional traits predispose an individual to experience particular emotional states (Mazerolle, Piquero, and Capowich 2003). In other words, a person with the negative emotional trait of anger, for example, is predisposed to experience anger as a reaction to a strain. Additionally, Agnew (2006) suggests that chronic strains may reduce levels of social control, foster the social learning of crime, and reduce the ability to legally cope with strains.

Adolescents who experience longer durations of poverty, family instability, and related residential instability are more likely to be at risk of engaging in conduct disorder (Foster et al. 2010). It is important to note that family instability does not refer to family structure as adolescents who have always been in single parent families are more closely associated with residential stability and low risk of engaging in conduct disorder. Additionally, Foster and colleagues (2010) found support that the offset of strains is associated with desistence from conduct disorder.

More specific strains that have a higher likelihood of being associated with criminal and delinquent behavior are negative relations, conflict, or rejection from

parents or family (Agnew and White 1992; Sampson and Laub 1993; Paternoster and Mazerolle 1994; Aseltine et al 2000), teachers (Agnew 1985; Paternoster and Mazerolle 1994), and peers (Short and Strodtbeck 1965; Paternoster and Mazerolle 1994; Agnew and Brezina 1997; Aseltine et al 2000), but not unpopularity with peer (Agnew and Brezina 1997), and neglect or abuse, both physical and emotional, in the household (Rivera and Widom 1990; Piquero and Sealock 2000).

Agnew (1985) points out that children and adolescents are often unable to escape noxious situations such as those listed above as their lives are typically structured around parents, teachers, and other institutions. The inability to avoid these painful and aversive conditions is a form of goal blockage experienced by adolescents. Adolescents who experience the strain of ostracism and are unable to exit the aversive situation are more susceptible to maladaptive responses, including anger and anxiety. Unable to legally avoid the negative conditions at home or school is likely to have an aversive effect on the social bonds of the juvenile, creating weak attachment to parents and low involvement in school. Both low attachment and involvement are independently related to increased delinquency, but that effect is greater when they occur concomitantly (Hirschi 1969; Sampson and Laub 1993). Although their findings are limited to delinquent scales specific to aggressive and violent behavior, Aseltine, Gore, and Gordon (2000) have found support that strain, in the form of negative life events and family conflict is related to delinquent behavior through anger and anxiety. As relations with parents, siblings, and general family are three elements of global ostracism, as these

relations deteriorate, adolescents become more susceptible to respond with anger, anxiety, and delinquency.

Negative Affective States

According to GST, stressors trigger negative affective states. These negative emotions create pressure for corrective action, may decrease one's ability to cope in a legal manner, and reduce the cost of criminal behavior, thereby increasing one's disposition for delinquency. In addition to anger, Agnew (1992, 2001, 2006) seemingly conversely asserts that depression (depressive symptoms) and fear, with which anxiety is associated, are negative emotions that are central to GST. Each of these emotions involves the negative evaluation of an event or experience. Based the work of Morgan and Heise (1988), Agnew (2006) differentiates these emotions from one another based on potency (feelings of power) and level of activity associated with the emotion.

According to Agnew (2006) depressive symptoms are characterized by low potency and low activity, meaning those who experience depressive symptoms often feel powerless and become inactive or lethargic. Individuals who experience depressive symptoms in response to stressors are likely to perceive the stressor as beyond his or her control. The experience of depressive symptoms generates the necessity for corrective action, though because of the nature of depressive symptoms, delinquency occurring subsequent to depressive symptoms is less likely to be related to aggression, but more related to substance use and abuse (Agnew 2006; Jang and Johnson 2003).

Anxiety, which Agnew (2006) posits as an emotion related to fear, is described as low in potency and high in activity. This combination results when individuals

experience a stressor, or an anticipated stressor, that he or she feels powerless to stop (low potency), thereby evoking a strong impulse to flee or hide (high activity) (Agnew 2006). This emotion is most associated with delinquency related to escaping a situation either physically (truancy) or psychologically (drugs) (Aseltine et al. 2000).

The last, and most critical, of Agnew's three central negative emotions is anger (Agnew 1992). The characterization of anger as high in potency and activity is strongly associated with individuals who feel unjustly treated by others and empowered to respond to the experienced injustice (Agnew, Brezina, Wright, and Cullen 2002; Agnew 2006). Anger occurs when individuals blame their adversity on others, "because it increases the individual's level of felt injury, creates a desire for retaliation/revenge, energizes the individual for action, and lowers inhibitions, in part because individuals believe that others will feel their aggression is justified" (Agnew 1992:60). Additionally, anger lowers an individual's capacity to cope within a legal framework because it lowers his or her ability to accurately assess the situation and communicate with others (Agnew 2006). Finally, Agnew (2006) also posits that angry individuals are less likely to consider the long-term consequences of their actions, lowering the cost of crime.

According to Pearlin (1981), depressive symptoms and anxiety are manifestations of stress, that is, depressive symptoms and anxiety are viewed as outcomes of the stress process. The powerful social and experiential causes of anxiety and depressive symptoms, along with their capacity to adequately evaluate the influence of precursory processes through direct observation, medical records, and self-reports,

present an attractive research model for social scientists investigating the consequences of stress (Pearlin 1989).

It is important to study multiple outcomes of stress, rather than just limiting its effects to depressive symptoms and anxiety. For example, Aneshensel, Rutter, and Lachenbruch (1991) and Hagan and Foster (2003) found that when substance abuse was considered as an outcome to stress, males were equally as vulnerable to stress as females, who appear more vulnerable when only measures of depressive symptoms are used as an outcome (Schuster, Kessler, and Aseltine 1990). However, Foster and Hagan (2013) also found that males are more likely than females to experience substance role problems and depressive symptoms during emerging adulthood after experiencing parental loss during adolescence, a gendered vulnerability outcome that is usually associated with externalizing behavior.

In addition to support for gendered vulnerability, Foster and Hagan (2013) found support for a gendered loss perspective. That is, the loss of a male parent is more closely associated with adolescent substance use issues, whereas the loss of a female parent increases the likelihood of experiencing depressive symptoms. The diversity of gendered outcomes reinforces the necessity for gendered analysis when evaluating the stress process. While anger does have a profound direct effect on depressive symptoms and substance use in adolescents, delinquent behavior has been found to mediate these subsequent effects (Hagan and Foster 2003). Additionally, several studies suggest law violation is the male equivalent to depressive symptoms in females (Colten, Gore, and Aseltine 1991; Kandel and Davies 1982) making them similar, yet gendered phenomena.

Gender

Emotions neither occur discretely of one another nor are they experienced equally between genders. Mirowsky and Ross (1995) note that according to gendered-response theory, females respond differently to stress than males with females experiencing anxiety and depressive symptoms (Pearlin and Schooler 1978) whereas males are more likely to respond with agitation and anger. However, Newmann (1986) finds that although women face greater exposure to specific hardships, she finds no evidence to support the assertion that women are more prone to depressive symptoms than men. Thoits (1987) also find that responses to stress vary by type of stress and structural position.

Kaufman (2009) finds that the experience of strain differs by gender both emotionally and behaviorally and Simon and Lively (2010) found that intense and persistent anger play an integral role in female depression. Females are equally as likely as males, or more likely, to respond to stress with anger (Mirowsky and Ross 1995; Broidy 2001). Mirowsky and Ross (1995) reported finding that women felt angry nearly 30 percent more frequently than men and that anger and depressive symptoms typically occurred in tandem while Broidy (2001) found that when "controlling for [type of] strain, strain-induced anger is equally likely among males and females, but other negative emotional responses to strain are more likely among females" (p. 22). It is important to note that some literature suggests the anger experienced by women differs from that experienced by men with male's anger reflecting externalization of emotions through moral outrage (Campbell 1993 in Broidy and Agnew 1997) and contempt

(Stapley and Haviland 1989) while female's anger suggests internalization, likely accompanied by depressive symptoms, fear, shame, surprise, shyness, sadness, guilt, anxiety, hurt, and crying (Frost and Averill 1982; Stapley and Haviland 1989).

Broidy and Agnew (1997) propose that the experience of depressive symptoms lessens the effects of anger on delinquency, thereby explaining the gender gap in crime. However, De Coster and Zito (2010) find that effect of depressive symptoms on delinquency is exacerbated by the concomitant experience of anger for males, but this relationship does not exist for females. This is an important finding not because depression mediates the effect of anger on delinquency among females but rather because it exacerbates the anger-delinquency link among males (De Coster and Zito 2010). Broidy and Agnew (1997) assert that female expressions of negative emotions are internalized, occurring through self-directed behaviors, while male expressions of negative emotions tend to be externalized, or other directed. Reinforcing this assertion, De Coster (2005) finds that males are more likely to respond to stressors with delinquency while females are more likely to respond with depressive symptoms. This may be due to depressive symptoms being related to social constructions of femininity and delinquency to masculinity (Heimer and De Coster 1999). Suggested earlier, the use of law violation or delinquency as an outcome for males may be equivalent to using depressive symptoms for females as an outcome and produces similar results for the respective genders (Colten, Gore, and Aseltine 1991; Kandel and Davies 1982).

Initially developed with mental health status, specifically depressive symptoms, and crime and delinquency as outcomes (Pearlin et al. 1981; Pearlin 1989; Agnew 1992,

2001), further research using the stress process paradigm and GST indicates the analysis of multiple outcomes such as depressive symptoms and substance abuse (Aneshensel, Rutter, and Lachenbruch 1991; Hagan and Foster 2003) or depressive symptoms and criminal behavior or delinquency (Van Gundy 2002; De Coster 2005; De Coster and Zito 2010) compels the need to diversify prospective outcome variables while highlighting the importance of gender specific models (Agnew and Broidy 1997; Aseltine et al. 2000; Hagan and Foster 2003; De Coster 2005; De Coster and Zito 2010; Foster and Hagan 2013).

Recent research has structured the stress process into a gendered, age-graded, and sequential stress theory that integrates negative affective states and examines the mediating effects of delinquency (when viewed as a developmental phase in the life course) on depression and substance use, suggesting this form of mediation is likely to produce additional stress leading to cumulative disadvantage (Hagan and Foster 2003). While Hagan and Foster (2003) used depressive symptoms as an outcome, they also included substance use as an outcome to their sequential stress process finding that males are more likely to react to stress with alcohol use and females with depression. De Coster (2005) also found gendered differences in stress exposure, vulnerability, and response. Following gender socialization, males are encouraged to focus on individualistic matters, whereas females are socialized to be more concerned with relational matters. De Coster's (2005) findings support these gendered socialized roles in that males are more exposed and vulnerable to agentic strains while females are more exposed and vulnerable to communal strains. Zhong and Schwartz (2010) have found

there is no long-term significant gender gap in underage drinking, but that official sanctioning of female underage drinking has increased, narrowing the gender gap in social controls. An individual's disposition to react to strains in a criminal or delinquent manner is influenced by coping resources and conditioning factors.

Social Correlates (Controls)

There are a variety of controls employed in the contemporaneous analysis conducted this study that include delinquent peers, perceived neighborhood problems, impulsiveness, age, race, and socioeconomic status. It is important to control for socio-demographic variables such as age, race/ethnicity, gender, and socioeconomic status because they are integral to the social stratification of individuals and operate as differentiators of position within the social structure creating unequal opportunities and access to resources during the stress-strain processes (Pearlin 1989; Aneshensel and Sucoff 1996). In the current study, parental education is used as a proxy to represent socioeconomic status. Association with delinquent peers may influence one's disposition to delinquency (Agnew 1992; 2013) while impulsivity, or adolescents who score lower in self-control, may influence an individual's predisposition to react with aggression when ostracized (Agnew et al. 2002; Twenge 2005).

The neighborhood in which one resides is also important in the social structural systems that shapes individual's lives, including their social actions, interactions, and experiences (Pearlin 1999). Neighborhoods are typically homogenous in their composition, creating social networks of individuals sharing similar statuses, facing similar hardships, and likely responding to those hardships similarly using similar

resources (Aneshensel and Sucoff 1996). These characteristics are increasingly salient for those who are less frequent to leave the context of the neighborhood including the elderly (Pearlin and Skaff1995) and children (Aneshensel and Sucoff 1996; Pearlin 1999). For this reason, it is likely that those residing in the same neighborhood will have similar access to the same coping resources, such as mastery and self-esteem, and will have a collectively different experience of stress.

Summary

Stress is found in everyday life and is not abnormal (Pearlin 1999). It can be from individual life events or chronic episodes that plague one for a period of time (Pearlin et al. 1981; Pearlin 1999). The experience of stress can have a direct effect on mental health or can impact it indirectly through role strains and decreases in one's self-concept (Pearlin et al. 1981). The effects of stress on mental health are often mediated by one's access to social support along with the level of his or her coping abilities (Pearlin et al. 1981). Because people reside in a social world, and the social world is hierarchically structured and segregated, the variations in one's stratified position and roles within the social structure influences nearly every aspect of the stress process, from life events and chronic strains to mental health and well-being (Pearlin 1989; 1999).

General Strain Theory (GST), which defines strain as "events or conditions that are disliked by individuals" (Agnew 2006:4), was developed from the stress process paradigm (Agnew 1992). Rather than focusing on the social structural elements that influence mental health and well-being, during its earliest conceptions GST focused on delinquent and criminal behavior (Agnew 1992). GST varies from the stress process in

that it places a greater emphasis on the negative emotions, or affective states, experienced by individuals who experience strain. According to GST, negative emotions that generate from the experience of strain, produces the need for corrective action (Agnew 2001; 2006). For some individuals, this corrective action is addressed through delinquent and criminal behavior. While GST places less focus on the social structural elements in the process, these elements are included in the form of conditioning factors (Agnew 2001).

In the stress process, life events often occur through the conduit of chronic stressors (Pearlin 1999). An individual's exposure and vulnerability to stressors, along with his or her ability to address stressors is largely rooted in the individual's position within the social structure of society (Pearlin 1989; 1999). Initial stresses, or primary stressors, that occur in one social sphere of activity sometimes create additional stresses, or secondary stressors, that branch into other social domains of one's life (Pearlin 1999; Pearlin et al. 2005). This process is known as stress proliferation. In GST strains are categorized into three areas – blockage from achieving positively valued goals, loss of positively valued stimuli, and the presentation of negative stimuli – and have a greater likelihood of resulting in delinquent and criminal behavior when they exhibit characteristics of being seen as unjust, high in magnitude, associated with low social control, and create incentives to engage in criminal behavior (Agnew 1992; 2001; 2006).

Anger, fear, and depressive symptoms are the negative emotions that essential to GST (Agnew 2001). These emotions can be characterized by their potency and associative level of activity (Agnew 2006). Anger is characterized as high in activity

and potency, meaning those experiencing anger feel empowered to take action to address the negative emotion (Agnew 2006). Depressive symptoms, which is often viewed as a mental health outcome in the stress process paradigm literature (Pearlin et al. 1981; Pearlin 1989; 1999), is an emotion posited by Agnew (2006) to have low activity and potency, meaning individuals who experience depressive symptoms feel powerless and do not take action to address the negative emotion. Lastly, anxiety is characterized as low in potency and high in activity, which means that individuals feel powerless to address the strain and take action to flee or escape the conditions associated with the strain or negative emotion (Agnew 2006).

Within the stress-strain paradigm, it is generally accepted that there are differences in genders throughout the processual elements involved (Mirowsky and Ross 1995; Broidy and Agnew 1997; Hagan and Foster 2003; De Coster 2005; De Coster and Zito 2010). Gendered response theory asserts that Males are more likely to respond to stress with anger and agitation (Mirowsky and Ross 1995), and are more likely to engage in delinquent and criminal behavior or substance use and abuse (De Coster 2005; Hagan and Foster 2003), whereas females are more likely to internalize their responses, suffering depressive symptoms and anxiety in reaction to strains and emotions (Mirowsky and Ross 1995; Broidy and Agnew 1997; De Coster 2005). There are also differences in vulnerability for males and females as well. The gendered vulnerability hypothesis simply relates that males are more vulnerable to certain stressors, such as those related to agency and autonomy, while females are more vulnerable to other stressors, such as communal stressors (De Coster 2005).

CHAPTER III

GLOBAL SOCIAL OUTCASTING: THE PROLIFERATION OF INTERPERSONAL OSTRACISM, EXCLUSION, AND REJECTION AND THEIR SOCIAL CORRELATES

Individuals whose behavior, actions, appearance, or structural conditions result in others associating the individual with undesirable auxiliary status traits, may experience the application of informal sanctions in the form of ostracism, rejection, and interpersonal exclusion (Becker 1963) all of which involve the casting out of an individual from a group, relationship, network, or interaction. The social construction of deviance is such that it is the social reaction of others that dictates the discrediting, labeling, and subsequent stigmatization of an individual rather than the behavior itself (Becker 1963; Goffman 1963; Grattet 2011). According to Becker (1963) there are not certain actions that are universally described as deviant while other actions are excluded. Rather, the classification of an action as deviant is determined through interactions between individuals (Becker 1963).

For example, a child with Attention Deficit Hyperactivity Disorder (ADHD) often receives an excess of negative feedback from parents and teachers and encounters significant difficulties creating and maintaining friendships with peers. Peers will, sometimes within minutes of the first encounter, impute the status of "objectionable playmate" to the ADHD suffer, attributing the designation of this status as the result of behavioral excesses (Landau, Milich, and Diener 1998). The context of the social

situation and variations in the characteristics of the interactants heavily influence the perception of a behavior as normative or nonnormative (Becker 1963; Ridgeway and Correll 2006). The power to apply social sanctions in response to nonnormative behavior is inherently granted to those with culturally accepted higher status characteristics (Becker 1963; Ridgeway and Correll 2006).

Structural factors play an integral part in the stress process, having a significant impact on one's experience of stress (Pearlin 1999). Hirschi (1969) argues that an individual's bond to social structures influences his or her propensity to engage in delinquency. Thornberry (1987) cautions that ignoring one's structural position in society limits the understanding that differences in social structure contribute to differences in delinquency and its causes. Reciprocally, in his interactional theory, Thornberry (1987) also argues that social interaction is where human behavior occurs. "Adolescents interact with other people and institutions and that behavioral outcomes are formed by the interactive process" (Thornberry 1987 p.864). For this reason, the current study focuses on human interaction rather than structural factors while also acknowledging the importance of structural factors.

Ostracism, rejection, and interpersonal exclusion have definitional overlap and are often used interchangeably (Ren, Wesselmann, and Williams 2018), but they are not the same concepts. Interpersonal exclusion occurs when an individual is purposely not included within a given group, network, relationship, or interaction, but does not require the individual to be ignored (Hogg, Terry, and White 1995; Williams, Forgas, Von Hippel, and Zadro 2005; Bernstein, Sacco, Young, Hugenberg, and Cook 2010).

Rejection requires the addition of an implicit or explicit verbal or physical indication that the individual is not wanted within a certain group, relationship, network, or interaction (Williams et al. 2005; Bernstein et al. 2010). The experience of being ignored is required in the definition of ostracism (Ren et al. 2018) but can include social banishment (Sias 2009) and targeted refusals of social interaction (Blackhart, Nelson, Knowles, and Baumeister 2009) and can have additional detrimental effects beyond those incurred from rejection and interpersonal exclusion (William 2007).

Neither membership nor desired membership with the in-group is *not* required to have been cast out, rather this outcasting can occur with an initial interaction. Children (in this case 1st through 6th graders) with ADHD are often found as undesirable playmates within minutes of an interaction with other children (Pelham and Bender 1982) and are at a higher risk for experiencing ostracism (Twyman, Saylor, Saia, Macias, Taylor, and Spratt 2010). Rejection causes pain, even when it occurs from undesirable groups (Gonsalkorale and Williams 2007). Consistent with Becker's (1963) labelling theory and the rejection literature (Leary, Twenge, and Quinlivan 2006), it is the evaluation of other's reactions, or perceived reactions, that results in the experience of outcasting. Outcasting is implicit or explicit actions perceived to designate an individual or group to the category of outsider, or outgroup member, in relation to any ingroup through physical, verbal, or nonverbal expressions of relational devaluation for which the perceived goal is to prohibit the individual from any interpersonal interaction, group, relationship, or network.

Drawing on the concept of reflected appraisals (Matsueda 1992) outcasting involves the evaluation of others reactions or perceived reactions. People's reactions are not always verbal nor are they always easily interpreted. Much in the way that reflected appraisals are one's evaluation of other's perception of one, outcasting involves one's perceived relational evaluation or "their perception of how much another person views the relationship as valuable or important" (Leary et al. 2006 p. 112). When an individual's evaluation of relational value does not meet or exceed his or her own desired level of value, relational devaluation is perceived to occur (Leary et al. 2006). Outcasting can occur through explicit statements of rejection or exclusion, but as outcasting involves individual's perceptions, outcasting can also occur through the perception of implicit actions. This means that an individual may infer certain actions or reactions to be outcasting even when the intentions of the actor where not to ostracize, reject, or exclude the individual.

While an outsider may be stigmatized, he or she is not necessarily located within a stigmatized group, which is designated as an outgroup relative to the culturally dominate group as opposed to the outsider who is in an outgroup relative to any ingroup (Crocker and Major 1989). The experience of outcasting attributes a label to the individual as an outsider, whether it be the label of deviant, unsuitable playmate, or other designation as an outsider (Becker 1963).

Further, interpersonal rejection, ostracism, and exclusion are often defined as a dichotomy between being accepted or rejected (Leary et al. 2006). However, there are varying degrees to which individuals feel accepted or rejected. An individual may feel

completely accepted by one person yet only partially accepted by another. It is not common for people to think of partial exclusion or rejection or mostly accepted, but rather it is dichotomized (Leary 2005). Similarly, one may feel a degree of rejection from one group, yet he or she may feel fully accepted by another group. The level of outcasting one experiences may vary from one social network to another. Outcasting experienced in one social network may proliferate into other social networks – an issue of particular importance to adolescents given the intertwined nature of their social networks. Global Social Outcasting (GSO) incorporates this social network-wide focus and is defined as the extent of one's social universe in which his or her perceived outcasting is evident, or the degree to which outcasting is perceived to extend from throughout the individual's social universe.

Research Questions of the Current Study

Does the experience of outcasting in one social domain proliferate into other varying social domains to create an experience of GSO? Previous research of 3rd through 5th grade children has suggested females, compared to males, are more likely to suffer victimization aimed at damaging peer relationships (Dempsey, Fireman, and Wang 2006) and at the same age, employ ostracism as a form of aggression (Björkqvist, Lagerspetz, and Kaukiainen 1990). Additionally, children ages 2-17 who experience one form of victimization often experience at least one other form of victimization, and those who experience four or more forms of victimization, or polyvictimization, are more likely to report experiencing higher levels of anger, anxiety, and depression (Finkelhor, Ormrod, and Turner 2007). Much literature has focused on more severe

forms of child victimization, such as violent or sexual victimization, and is not the focus of this study. Rather this study focuses on the emotional victimization caused by the experience of GSO. Given the lack of gender differences in grade-school children not experiencing victimization (Dempsey et al. 2006), the significant effects on delinquency, depression, and anger for both males and females from the experience of parental rejection in both 7th graders and high school students (Whitbeck, Hoyt, Simons, Conger, Elder, Lorenz, and Huck 1992; Hay 2003), and the apparent lack of difference in gender (along with race/ethnicity, place of residence, and socioeconomic status) in children experiencing polyvictimization (Finkelhor et al. 2007), does the gender of the research participant influence the perceived experience of GSO? Discussed earlier, it would be erroneous to ignore the importance of structural factors (Thornberry 1987) as they can influence delinquency, emotions, stress, and strain (Pearlin 1999; Agnew 2006), but what influence do these social correlates have on experiencing GSO?

Becoming an Outsider

Outsider status is not determined by the action or behavior, but are determinant on the audience with which the perpetrator interacts. Some behaviors or acts may be unintentional and simply relate to the unawareness of behavioral norms or expectations (Becker 1963). The behavioral excesses of ADHD sufferers are unintentional as they are related to a deficiency in their communicative abilities inhibiting social reciprocity or are unable to implement their social skills, exhibiting behaviors, such as being noisy, boisterous, intrusive, explosive, critical, or argumentative, that are likely to be aversive to most peer groups (Laundau et al. 1998). Ignorance of social and behavioral norms

can also be associated with individuals who are heavily immersed in a subcultural group, unaware that actions and behaviors they consider to be normal, are undesirable or aversive to others outside the subculture (Becker 1963). Actions that are normalized by one group may be wildly outside the realm of acceptability for another group – think virginity pledgers versus swingers and bondage participants.

Those with illegitimate power or insufficient affective value who seek to outcast or label an individual are likely to encounter inconsequential effects (Matsueda 1992; Asencio and Burke 2011). However, Gonsalkorale and Williams (2007) point out that even when originating from a group held in low or negative esteem, such as the Ku Klux Klan, ostracism still causes significant pain to the victim resulting in worse mood, lower levels of belonging, self-esteem, control, and meaningful existence. While individuals may initially experience these reactions, it is possible that the individuals easily dismiss experiences of rejection because they are not from a source of affective value or legitimate power. Since the findings of Gonsalkorale and Williams (2007) were established using laboratory experiments that only included three individuals – only one of them real – another explanation is that in socially restrictive interactions, such as those with limited interaction partners, interaction frequency exceeds affective value and power legitimacy in its impact on the individual (Stryker and Serpe 1982; Asencio 2011). The casting out of an individual as an outsider through rejection, ostracism and interpersonal rejection may have serious implications on his or her self-concept (Bartusch and Matsueda 1996; Asencio and Burke 2011) through threatened self-esteem

and perception of control over his or her social environment or situation (Pearlin, Menaghan, Lieberman, and Mullan 1981; Williams 1997; Pearlin 1989).

The initial act of nonnormative behavior, referred to as primary deviance, is unlikely to lead to outsider status. According to Lemert (1951) deviance will remain primary or situational as long as the behavior or actions are addressed as functions of a socially acceptable role. Without a community reaction (even a temporary severe one) to the primary deviance, it is questionable whether this will lead to secondary deviance, unless the societal reaction is traumatic for the individual or he or she reads in social meanings that are not actually present (Lemert 1951; Becker 1963).

As part of the socialization process, individuals develop conceptions regarding a variety of social elements (Scheff 1966 in Link and Phelan 2001) and link them to specific characteristics in people (Ridgeway and Correll 2006). These conceptions, widely spread, inform the individuals of a community or culture about what it means to possess a certain characteristic, thereby developing cultural stereotypes or status beliefs (Ridgeway and Correll 2006). Through this process, people learn about the expectations of a community or culture and the ramifications for violating these expectations (Link and Phelan 2001). For example, once people have learned a community's beliefs about what it means to be a delinquent, they form expectations as to whether a delinquent person will be rejected and devalued (Goffman 1963; Link and Phelan 2001).

There is typically a reciprocal relationship between the primary deviance and the societal reaction such that the primary action occurs, followed by social sanctions, followed by more deviance and more social sanctions (Lemert 1951). The reciprocal

nature of deviance is not limited to delinquent behavior, but also includes social learning and social control (Thornberry 1987). Community reactions to primary deviance also help to inform members of the community about expectations (Scheff 1966 in Link 1987). An individual with strong bonds to parents or school is less likely to engage in delinquent behavior (Hirschi 1969), but adolescents who perceive themselves as becoming labeled as an outsider are likely to experience weaker bonds to parents or schools (Thornberry 1987). Because human behavior occurs in social interactions, schools and parents are mutually influenced by one another (Thornberry 1987), which perpetuates the proliferation (Pearlin 1999) of the perceived label of difference (Becker 1963) and consequently impacts the delinquent behavior of the adolescent (Matsueda 1992). The weakened social control of the adolescent presents a greater range of behavior available to the adolescent (Thornberry 1987). Importantly, self-labeling is also possible in response to certain infractions, particularly those that are widely accepted as nonnormative (Norris 2011). If the individual believes that the community will reject and devalue delinquents, then committing a delinquent act evokes fear that this rejection and devaluation will come to apply to oneself (Link 1987).

If those observing an act feel it is egregious enough that sanctions need be applied, they may bring the infraction into public view, necessitating the sanctioning of the individual (Becker 1963). Deviant behavior that is repetitive or done in highly visible environments, or that incurs more severe social reactions, is likely to be incorporate by the individual as a part of "me" (the self-concept) (Lemert 1951). Additionally, those who fear rejection and devaluation, which may be characterized by

the experience of anxiety, may experience lower self-esteem and behave less confidently, may be more defensive and less social (Link 1987; Link, Cullen, Struening, Shrout, and Dohrenwend 1989; Link and Phelan 2001). These individuals, fearing rejection and devaluation, may begin to exhibit behavior that is conducive to incurring stigmatization, thereby exacerbating the likelihood of becoming labeled. Having the deviant behavior become visible to the general public and publicly being labelled a deviant is one of the most important aspects of developing a stable pattern of deviant behavior (Becker 1963). The integration of deviant behavior into an individual's social roles, or the utilization of the behavior as a reaction to social consequences, indicates the individual is engaging in secondary deviance and is likely no longer part of the in-group, cast as a member of the out-group, thereby stigmatizing him often through name calling, labelling, and/or stereotyping (Lemert 1951).

As an outsider, he or she is placed into a stigmatized social classification that functions to differentiate the individual from an ingroup, linking attributes (undesirable, inferior, and discredited) to characteristics stereotypically associated with outsider status, locating the stigmatized individual at a decreased position in the social hierarchy, limiting his or her power to define differentness, construct norms, apply sanctions, and avoid social discrimination (Goffman 1963; Becker 1963; Link and Phelan 2001; Grattet 2011). Stigmatization is not a mark or attribute incurred through external application by another (Link and Phelan 2001), rather stigmatization is the responding internalized sentiment suffered by individuals afflicted by the demoralization of outcasting.

A single individual is often associated with many different social roles within society, usually separated in time and place, interacting with a variety of different people based on each social role or arrangement, but the individual remains a single entity (Pearlin 1999). When the integration of existing roles is interrupted, they require reorganization or altogether replacement (Lemert 1951). Becker (1963) recognizes that "societies are integrated in the sense that social arrangements in one sphere of activity mesh with other activities in other spheres in particular ways and depend on the existence of these other arrangements" (p. 35) and Pearlin (1999) asserts that the experiences an individual has in a given "social arrangement" structure his or her experience in other social domains, indicating that social roles and behaviors are not easily separated and that one's behavior or actions in one social experience or environment, along with other's reactions and implementation of sanctions, may carry over into other settings.

As a consequence of secondary deviance, the individual's public identity is altered (Becker 1963), and the devalued social status as an outsider integrated into the individual's identity (Goffman 1963; Link et al. 1989). Once an individual is labelled as an outsider, externally evident through the symbolic nature of his or her clothes and speech (Lemert 1951), he or she becomes subject to the homologous responses from others (Scheff 1966 in Link and Phelan 2001) and when coupled with the inability to compartmentalize stress endured (experiencing outcasting) in one social domain from experiences in other social domains (Pearlin, Aneshensel, and LeBlanc 1997; Pearlin 1999) the individual's behavior is solidified in conforming to the expectations of others

(Scheff 1966 in Link and Phelan 2001) facilitating the proliferation of outsider status (Becker 1963) to his or her social universe (Pearlin, Aneshensel, and LeBlanc 1997; Pearlin 1999). Once the label of outsider is internalized by the individual and he or she has incorporated it as a central identity, the process is complete and master status (Hughes 1940 in Becker 1963) of outsider is the consequence (Becker 1963; Scheff 1966 in Link and Phelan 2001).

Reactions to Outcasting

The negative effects that are consequential to outcasting and becoming labelled a deviant or outsider are dependent on the individual's reaction to the application of the label (Link, Cullen, Struening, Shrout, and Dohrenwend 1989; Grattet 2011). Social controls affect behavior by rewarding valued behavior and applying sanctions to undesirable behavior (Becker 1963; Scheff 1966 in Link and Phelan 2001). An individual suffering from a deviant identity may embark on a journey of self-fulfilling prophecy, shaping the image others have for the individual (Becker 1963). Individuals who experience outcasting often go through a sequence of reactions beginning with pain and hurt, followed by an attempt to fortify the threatened need, and finally, when coping mechanisms are depleted, acceptance and resignation (Williams and Zadro 2005). Similarly, in response to being labeled deviant, the individual may choose to correct the behavior to regain favor with non-deviants or he or she may continue with the behavior, eventually joining or becoming associated with a deviant subculture (Becker 1963). An individual's acceptance and resignation to the experience of ostracism (Williams and Zadro 2005) and decision to join, or realization that he or she has already joined, an

outsider subculture (Becker 1963) have the most profound effects on the individual's self-identity.

In early adolescence, individuals may experience negative relations with others of legitimate power and affective value, such as parents, siblings, and family in general, as well as peers and teachers (Pearlin et al. 1981. Pearlin 1989, 1999; Agnew 1985, 1992, 2001, 2006; Rivera and Widom 1990; Agnew and White 1992, Sampson and Laub 1993; Paternoster and Mazerolle 1994; Agnew and Brezina 1997; Aseltine, Gore, and Gordon 2000; Piquero and Sealock 2000). Some adolescents may be able to cope with discrete incidences of these negative relations (Agnew 2001). The chronic strain of incurring multiple or persistent instances of outcasting is likely to cause the individual significant stress (Pearlin 1999) in the form of becoming an outsider (Becker 1963) or social outcast – a term referencing an individual experiencing ostracism, rejection, or interpersonal social exclusion (Williams, Forgas, Von Hippel, and Zadro 2005). When instances of outcasting occur from multiple sources, such as teacher, parents, or siblings, the phenomenon becomes global in nature. The interlocking nature of adolescent social networks makes this phenomenon particularly important for adolescents. The behavior of others through interactions between parents and teachers, teachers and peers, peers and siblings, siblings and parents, and parents and peers, is mutually influential (Thornberry 1987) thereby facilitating the perceived proliferation of outcasting into multiple spheres of an individual's life. GSO does not require outcasting to occur in *all* social domains of the individual's life, rather the concomitant outcasting of the individual from *multiple* social spheres categorizes the episode as global in nature.

Methods

Data

The Kaplan Longitudinal and Multigenerational Study (KLAMS) began collecting data in 1971 by surveying 7th grade students from half of the randomly selected schools in the Houston Independent School District netting 7,627 participants age 12-13. The topics of self-attitudes, social-psychological factors, deviant behavior, and interactions and experiences with school, family, and peers were the focus of the self-administered questionnaires (Kaplan, Liu, and Kaplan, 2005). Follow-up interviews were conducted through 1998 for a total of seven waves of data.

During the Wave VII of data collection, from 1994-2002, researchers began interviewing the biological, adopted, step, and foster children of 3,568 of the original participants creating a second generation of 7,519 participants ranging in age from 12 to 37 years old (Kaplan, Liu, and Kaplan, 2005; Pals and Kaplan, 2013A; a more detailed description can be found in Kaplan and Lin, 2005 or Chen, Liu, and Kaplan, 2008 or Pals and Kaplan, 2013B). This second generation is the primary focus of this study limiting the sample to adolescent participants, those aged 11-17 in Wave I, reduces the sample to N=6,195 (3,137 males and 3,058 females) for this analysis. Analysis for participants who report having at least one sibling limits the sample to N=5,762 (2,923 males and 2,839 females) and N=433 for respondents without siblings (214 males and 219 females).

Variables

Global Social Outcasting. The second-order latent construct of GSO is the combination of indexes associated with participant perceptions of poor relations, ostracism, interpersonal rejection, and exclusion from parents, siblings, family, peers, and teachers (see Figure 3.1). The latent construct of GSO has similarities to the elements of teacher and parent rejection in "self-rejection measures" used by Kaplan, Martin, and Johnson (1986) and Kaplan and Liu (2001), but differs significantly by operationally expanding parental rejection, including family, peer, and sibling measures, and using an advanced methodological approach in variable creation through second-order CFA. First-order latent constructs measuring parent relations, peer relations,

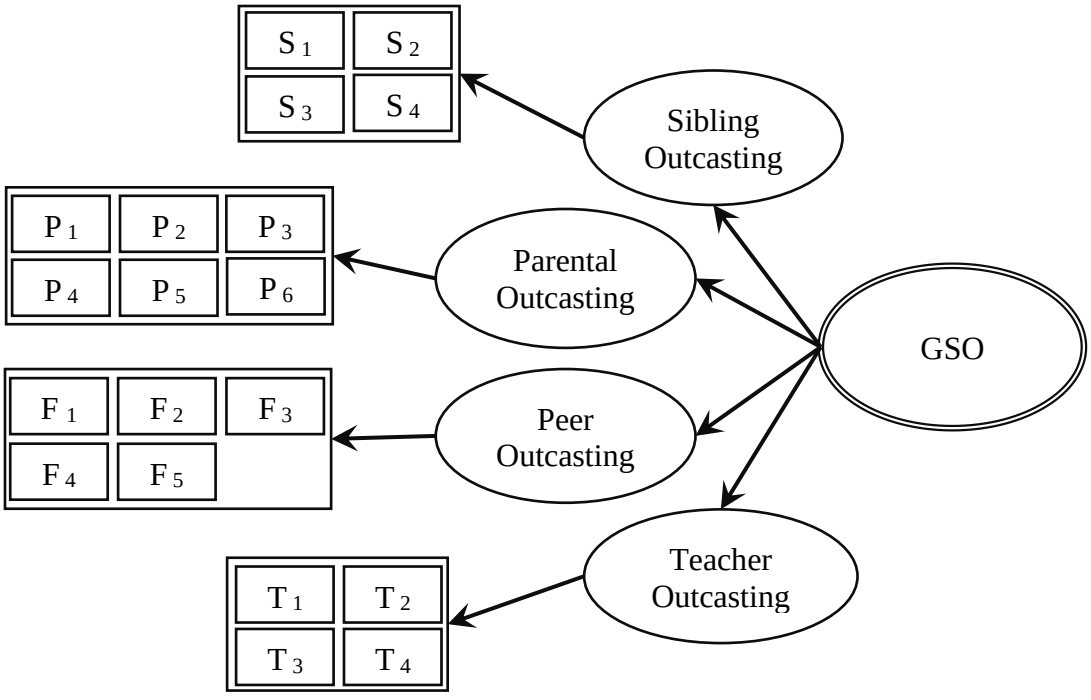

Figure 3.1: Measurement Model of Global Social Outcasting as Hypothesized Second-Order Latent Variable

sibling relations, family relations, and teacher relations are created, followed by conducting a second-order CFA, transforming the individual constructs of parent relations, peer relations, sibling relations, family relations, and teacher relations into a second-order latent construct of GSO (Brown 2015).

A latent construct representing siblings outcasting utilizes a 4-item index of respondent's dichotomous responses to true or false statements regarding the participant's relationship with his or her siblings, such as "We fight a lot among ourselves," "We trust one another," and "We try not to let one another down" (see Appendix A for full list of observed items used to construct all outcasting variables). Dichotomous answers to questions such as "My parents are usually not interested in what I say or do," and "As long as I can remember, my parents have put me down" are representative of parental outcasting and are used to construct a 5-item index. Peer outcasting is the product of a 5-item index created from dichotomous answers to questions like "More often than not I feel put down by the kids at school," "The kids at school are usually not very interested in what I say or do," and "Most of the kids at school do not like me very much." Participant who have become marginalized, intentionally or involuntarily, to the extent that he or she has begun to associate closely with other marginalized adolescents may perceive members of an out-group as his or her peers (Becker 1963). It is possible the individual will feel outcasting from other peer groups, but report no outcasting from his or her peers (the out-group). Alternatively, a marginalized adolescent who associates closely with other marginalized adolescents may still report the experience of outcasting from members of the out-group, an experience

that is likely to cause as much hurt as the initial outcasting from any in-group. Lastly, teacher outcasting is a 4-item scale created from dichotomous answers to questions like "My teachers usually put me down," My teachers do not like me very much," and "My teachers are usually not very interested in what I say or do." The age of respondents at Wave I (11-17) is such that students have begun taking classes with multiple teachers throughout the day. With only short exposure to each teacher, it is possible that students are less vulnerable to outcasting from teachers, notice outcasting less, or simply care less when outcasting occurs. Additionally, when asking participants about "my teacher," the ambiguity about which teacher for students who see multiple teachers each day may result in the participant choosing to respond about a particular teacher, while experience with other teachers may differ for the participant. This structure of education paired with the question's wording may result in a poor fit for inclusion with a second order latent variable of GSO. Following the first order CFA of the individual measures of parental, peer, sibling, and teacher outcasting, a second order CFA is conducted to combine these elements into a latent construct of GSO.

Social Correlates. There are seven variables employed in the analysis conducted regarding the relationship of social correlates to outcasting that include age, race/ethnicity, socioeconomic status, delinquent friends, perceived neighborhood problems, impulsivity, and health (see Appendix B for full list of observed measures). Age is measured by subtracting the participant's date of birth from the date of the Wave I study interview. Race/ethnicity is separated into four dummy variables and indicates whether the respondent is White, Black, of Hispanic dissent, or of another race.

Participants who responded he or she identifies as Mexican American, Mexican National, Cuban, Puerto Rican, or Other Spanish-speaking ethnicity were categorized as Hispanic and those who indicated he or she identifies as Japanese, Chinese, Vietnamese, "Other Oriental [sic]," Indian (from India), American Indian, or other group not identified were categorized in the group of "Other race." Socioeconomic status is constructed using parental education taken from the parental survey at Wave VII and only reports the education of the parent participant.

The measure of delinquent peers uses 11 questions that measured respondent's knowledge or perception of friend's ever engaging in delinquent activities that include both violent and nonviolent delinquency, as well as drug use and solicitation. The measure of perceived neighborhood problems, a concept that Pearlin (1989, 1999) advocates is strongly influential in the stress process, is adapted from Elliott, Ageton, Huizinga, Knowles, and Canter (1983). Where the original 31 items measuring one's perceptions of neighborhood problems were measured along a 3-point scale, the current 12-item index is comprised of dichotomous responses to questions regarding different racial or cultural groups who do not get along with each other, abandoned houses, public intoxication, sexual assaults and rapes, gangs, and burglaries and thefts, and several others.

Impulsivity is a single-item measure represented by participant's dichotomous response to the question "I often act without stopping to think." Health is a 4-item scale constructed from respondents answers to the questions of how much his or her health "limits the kinds of physical activities you can do, such as running, lifting heavy objects,

participating in strenuous sports," "prevents you from doing certain kinds or amounts of work, housework, or schoolwork," and "requires that you get help eating, dressing, bathing or going to the bathroom?" These responses are classified into distinct ordinal categories, meaning if the participant indicate he or she is in the most severe category, needing help eating, dressing, bathing, he or she is not represented in the other three categories. The same process is employed through the next two categories with a fourth category of no health issues. Greater scores in the health scale indicate better health.

Analysis

Initial data management, such as recoding procedures, was completed using Stata version 15. For the remaining analysis, the statistical software Mplus version 8.3 was employed to conduct a confirmatory factor analysis (CFA) to create all latent variables and perform structural equation modelling tasks. While Stata 15 has as extensive structural equation modeling suite, only the Mplus software offers diagonally (robust) weighted least squares (WLSMV) estimation with maximum likelihood numerical integration. Weighted least squares (WLS) estimation is one of the most common methods used in CFA but performs poorly when used with binary data producing a negatively biased standard errors and over-sensitivity of χ^2 (Muthen and Kaplan 1992). Maximum likelihood (ML) is another popular estimation method used for conducting CFA, but should not be used with categorical data, which usually severely violates the normality assumption in the observed variables, because this violation typically result in diminished estimates of indicator correlations, "pseudofactors" that are artifacts of item difficulty or extremeness, and incorrect test statistics and standard errors (Muthen and

Kaplan 1992; Brown 2015; Li 2016). Instead, for CFA using binary variables, robust ML (MLR) and WLSMV have been suggested to outperform ML (Li 2016). WLSMV was specifically designed for use with ordinal data, assuming a normal latent distribution rather than normal distribution of observed variables (Li 2016). Brown (2015:354) recommends the use of WLSMV because it "provides WLS parameter estimates by using a diagonal weight matrix and robust standard errors, and a mean- and variance-adjusted χ^2 test statistic" along with the ability to use ML via numerical integration. Utilizing ML in conjunction with numerical integration, allows the full information capabilities of maximum likelihood to operate within a categorical modeling framework (Brown 2015). Lastly, WLSMV was also found to be less biased and more accurate than MLR in nearly every condition tested (Li 2016)

This study employs CFA to create latent constructs for all variables measured using multiple observed items. Variables utilizing a single item construct include age, race, health, and socioeconomic status (by proxy of parental education). CFA deals specifically with measurement models and statistically tests the specified theoretical model of a factor (Schumacker and Lomax 2010). That is, certain items or questions are theorized to measure a specific construct and CFA statistically test this hypothesized item-factor relationship. As its name suggests, CFA is widely used to confirm the construct validity of measurements based on theory (Li 2016). The hypothesis-driven nature of CFA requires that all aspects of the model are prespecified based on theory and research (Brown 2015). CFA is advantageous because a better measure is created by isolating the unique variance from the shared variance for questions used in each latent

construct, thereby removing measurement error and producing more meaningful results (Wang and Wang 2012; Acock 2013; Brown 2015). CFA is an appropriate method for this analysis because while empirical data has supported the notion that adolescents experience outcasting (see above), it is hypothesized that outcasting in one social sphere of activity (first-order latent variables) proliferates into other social domains creating a feeling of GSO (second-order latent variable).

A first-order CFA first requires the hypothesis of a theoretically specified model from observed measures to create each latent variable, followed by tests examining goodness of fit and concept validity (Wang and Wang 2012). The factors of parental, sibling, peer, and teacher outcasting are thought to be intercorrelated, thus it is hypothesized that GSO requires the utilization of a second-order CFA approach. Higher-order (in this case second-order) CFA is performed to provide a more parsimonious account for the first-order factor correlations (Brown 2015). However, if no relationships are found to exist between these five first-order factors, then there is no justification for a second-order factor analysis. Figure 3.1 illustrates the second-order CFA for the concept of GSO with each observed measure depicted in the diagram corresponding to those found in Appendix A. A second-order CFA requires the development of preferred models and valid first-order factor analysis, followed by the examination of significance and pattern of correlations between the first-order latent factors, and finished by fitting the second-order factor using many of the same rules used for fitting a first-order factor (Brown 2015).

The chi-square Test of Model Fit estimates whether the model sufficiently reproduces the sample covariance matrix– does the model fit the data – and a significant value indicates that the model significantly *does not* fit the data (Acock 2013). The RMSEA measures how much error is included in each degree of freedom and the SRMR measures how closely the model comes to reproducing each correlation (Acock 2013). Lastly, the CGI and TLI both compare the specified model to the null model with TLI adding penalties for estimating parameters that do not significantly improve the model (Brown 2015). In CFA analysis of continuous data, a variance-covariance matrix is analyzed. However, when using binary data, a tetrachoric correlation matrix is instead analyzed (Wang and Wang 2012; Brown 2015). Thus, the sample tetrachoric correlation matrix is analyzed using Mplus 8.3.

Brown (2015) recommends using the parameters suggested by Hu and Bentler (1999) to determine a preferred fit for both first- and second-order models. Those parameters are as follows: close to RMSEA (≤ 0.06, 90% CI ≤ 0.06, CFit *ns*), SRMR (≤ 0.09), CFI (≥ 0.95), and TLI (≥ 0.95). The use of the term "close to" is intentional as Hu and Bentler (1999) note that cutoff values fluctuate with model conditions. DiStefano and Morgan (2014) found that the rate of CFI values indicating poor fit increased when fewer categories were present and in data with moderate to extreme nonnormal item distribution, likely largely due to less convergence. Brown (2015) points out that Beauducel and Wittmann (2005) suggest that because fit statistics fluctuate as a function of model conditions, cutoff statistics suggested by simulation studies are of limited generalizability to models in applied research. Marsh, Hau, and Wen (2004) have

asserted that the cutoff statistics suggested by Hu and Bentler (1999) are too conservative for CFA models with "many indicators and several factors where the majority of cross-loadings and error covariances are fixed to zero" (Brown 2015 p.75). West, Taylor, and Wu (2012) indicate that Marsh and colleagues (2004) have questioned the rationale behind the standards proposed by Hu and Bentler (1999) because a determinant of the outcome is the implied reintroduction of sample size. The use of combination rules is also a common practice in reporting fit indices. Hu and Bentler (1999) caution that the combination rules of CFI < 0.90 with SRMR > 0.09 and RMSEA > 0.06 with SRMR > 0.09 resulted in the fewest Type I and Type II error rates for misspecified models, meaning these cutoff values were the least accurate in detecting errors.

It is important to note that models do not have to pass every goodness of fit test in order to be considered a "good model fit" (Brown 2015). For example, if model fails the chi-square Test of Model Fit, but has acceptable values on many of the other goodness of fit metrics, that model is widely considered a "good fit" (Acock 2013; Brown 2015). Brown (2015) urges researchers to consider multiple categories of fit statistics and West and colleagues (2012) propose using cutoff values as more of a guide, rather than a strict rule regarding the rejection or acceptance of a hypothesized model. Bentler (2007) even recommends using at most two fit indices to accompany a structural model. As such, a *preferred* model in the current research is consistent with the recommendations of Hu and Bentler (1999) having RMSEA (≤ 0.06, 90% CI ≤ 0.06, CFit *ns*), SRMR (≤ 0.08), CFI (≥ 0.95), and TLI (≥ 0.95) and an *acceptable* model will

have values consistent with the suggestion of Browne and Cudeck (1993) for RMSEA (≤ 0.08), the original values recommended by Bentler (1990) for CFI (≥ 0.90) and TLI (≥ 0.90), and the value considered an acceptable fit by Kline (2005) for SRMR (≤ 0.10).

Brown (2015) and Wang and Wang (2012) warn against using the chi-square Test of Model Fit statistic as the only measure of goodness of fit listing several criticisms. First, the chi-square statistic is very sensitive to sample size and with larger samples, chi-square tends to almost always reject the model (Bentler and Bonett 1980) and smaller sample sizes may not allow for a chi-square distribution (Wang and Wang 2012). Additionally, the chi-square is also very sensitive to violations of multivariate normality. In the current study, the observed indicators on the first-order latent variables are binary, violating the chi-square statistic's assumption of normality, resulting the possibility of a properly specified model being rejected. Furthermore, the chi-square statistic increases as the number of variables increases, creating the additional possibility of a good-fitting model being rejected (Wang and Wang 2012). Lastly, when using the WLSMV estimator, the chi-square statistic is not reported in the regular way and cannot be directly used for model comparison (Muthén and Muthén 1998-2017), but rather a two-step process is required in which a more restrictive model is estimated by imposing equality constraints and compared to the congeneric model through chi-square difference testing. While there are several constraints that can be evaluated, Brown (2015) recommends using the equal factor loadings restriction. Wang and Wang (2102) recommend testing a multi-factor first-order CFA model against the restriction of equal variances between latent constructs and Muthén and Muthén (1998-2017) recommend

using a zero-covariance restriction in which the covariance between latent constructs are specified to zero. A significant result from these chi-square difference tests indicates that the imposed restriction significantly degrades the model. This is not to be confused with the chi-square difference test that is reported for tests of multigroup measurement equivalence/invariance (ME/I) in which a non-significant statistic is desired, meaning there is no statistical difference between groups – in the current study, males and females.

In the latent variable framework, it is assumed that the latent variable provides a more accurate measurement of the construct using items with more varied evaluative dimensions than dichotomous indicators by placing binary indicators into a unifying framework reflecting the amount of underlying, continuous, and normally distributed characteristic that is required for response in a given category of an observed variable (Brown 2015). It is assumed that each categorical variable has an underlying continuous scale and that the categories are only crude measurements of that continuous scale with each threshold (or category) representing only a portion of the continuous scale (Byrne 2012). In other words, it is the concept represented by the latent variable, depression, for example, that gives rise to a participant's binary responses to a question, such as those asking about depressive symptoms (Edwards, Wirth, Houts, and Xi 2012). A given construct, such as social rejection, will be more accurately represented and measured using several indicators that produce a range of responses that are larger and more normally distributed than that of a single binary indicator. There are differences in analytic procedures and interpretations of CFA with binary indicators than CFA with

continuous indicators. First, because a correlation matrix is employed rather and a variance-covariance matrix, the observed variances of the indicators are not analyzed. Instead, when using delta parameterization, such is the case with the current study, the variance of the latent measure is arbitrarily fixed to 1.0 for all items, resulting in error variances (referred to as residual variance in Mplus) not being identified or included in the CFA model (Wang and Wang 2012; Brown 2015). Second, because the variances of the latent measures are standardized to 1.0 in CFA with binary indicators, the factor loadings are interpreted differently. To interpret factor ladings for binary observed indicators, the squared standardized factor loadings (R^2) represent the proportion of variance in the latent construct of the observed item that is explained by the first factor of the hypothesized model, as opposed to CFA with continuous indicators in which factor loading estimates are interpreted as the proportion of variance in the observed measures being explained by the underlying factor (Byrne 2012; Brown 2015). Lastly, rather than phi correlations derived from observed measures, as is the case in CFA with continuous indicators, the coefficients in the tetrachoric correlations matrix are based on the latent response variable underlying the binary indicators.

Ensuring goodness-of-fit and proper factor loadings, congeneric CFA models are independently constructed for each gender and each domain of outcasting – parental outcasting, peer outcasting, sibling outcasting, and teacher outcasting. This results in 8 initial congeneric CFA models for participants reporting the existence of siblings and, without the construct of sibling outcasting, 6 initial congeneric CFA models for participants that did not report the existence of siblings. Latent constructs are specified

such that perceptions of parental understanding (P_1), closeness (P_2), shared activities (P_3), disinterest (P_4), disparagement (P_5), and antipathy (P_6) load onto the latent variable of Parental Outcasting. Observed indicators of perceived sibling conflict (S_1), trust (S_2), dependability (S_3), and affection (S_4) all load onto the latent variable of Sibling Outcasting and perceptions of teacher disinterest (T_1), sense of failure (T_2), disparagement (T_3), and antipathy (T_4) loaded onto the latent variable of Teacher Outcasting. Lastly, the indicators of peer disparagement (F_1), disinterest (F_2), antipathy (F_3), quantity of friends (F_4), and ease of making friends (F_5) load onto the latent variable of Peer Outcasting. All measurement error was presumed to be uncorrelated with the exception of peer quantity of friends (F_4) and ease with which the participant makes friends (F_5) and no double-loading indicators were specified in the model. As the data is all dichotomous, there is no assumption of normality nor is there an inspection for outliers. A nested $\chi 2$ test for each latent construct is conducted to evaluate the less restrictive congeneric model against a more restrictive alternative model constrained to equal factor loadings model (Brown 2015).

Following the formation of preferred CFA models for each gender, additional tests of ME/I are conducted to establish invariance between genders for each independent domain of outcasting. These tests are conducted separately for participants with siblings and without siblings. Once measurement invariance is established for each of the individual latent constructs, a combined 4-factor first-order CFA is conducted in which, based on prior theory of the proliferation of outcasting between social domains, the latent variables parental outcasting, sibling outcasting, peer outcasting, and teacher

outcasting were permitted to be correlated. The exclusion of sibling outcasting in the analysis of participants without siblings results in a 3-factor, rather than 4-factor, first-order CFA, but the permission of correlated latent variables remains. The 4-factor and 3-factor first-order models are evaluated against three restrictive alternative models that are constrained to equal factor loadings, equal latent variances, and zero latent covariances. Finally, a second-order 4-factor CFA model of GSO is constructed using the previously established 4-factor and 3-factor first-order preferred models for each gender and sibling condition. Test of ME/I are then conducted to establish the invariance of the second-order model.

After a latent construct measuring GSO is established, a structural model that incorporates the previously discussed social correlates of age, race/ethnicity, socioeconomic status, delinquent friends, perceived neighborhood problems, impulsivity, and health is evaluated to determine the influence these social and structural have on the experience of adolescent GSO.

According to Li (2016), Jöreskog and Sörbom (1996) recommend a sample size for CFA analysis of at least $(p + 1)(p + 2) / 2$ where p is the number of observed variables. However, Li (2016) points out that, for CFA, others (Muthén and Muthén 2002) have recommended larger sample sizes of 150 for normal observed indicators and 265 for nonnormal observed indicators. For full structural models, Wang and Wang (2012) caution against using a simple rule of thumb as the sample size required for SEM is dependent on many characteristics of the model. By the standards suggested by Muthén and Muthén (2002), the data provides an ample sample size for the CFA

analysis for participants with siblings. However, the sample size of participants indicating no siblings falls slightly below the suggested sample size for CFA analysis with nonnormal observed variables.

Results

CFA Results for Respondents with Siblings

All hypothesized measurement and structural models for respondents with siblings are overidentified with an overall male sample of n=2,923 and a female sample of n=2,839 using maximum likelihood (WLSMV) to address missing data. Identification of a model is the difference between freely estimated model parameters such as variances, covariances, structural coefficients, and factor loadings (unknown information) and the number of items in the observed variance-covariance matrix (known information) (Kenny and Milan 2012; Brown 2015). When a model consists of more unknown information (freely estimated parameters) than known information, the model is underidentified and a unique solution cannot be estimated (Brown 2015). A just-identified model has equal parts known and unknown and it is possible to derive unique parameter estimates that exactly solve the model, but goodness-of-fit statistics are of little value (Kenny and Milan 2012). Lastly, an overidentified model is one in which there are more known parts than unknown and produces results for possible values of x and y with some discrepancy between the known information and the solution using the estimated values (Kenny and Milan 2012; Brown 2015). Despite the just-identified model having an exact solution for the model, the overidentified model is preferred. The preference for an overidentified model is because a just-identified model

cannot be found to be false but falsifiability is one goal in model testing. An overidentified model is always wrong to some extent, and the extent of the model's wrongness, provides insight regarding how good or bad the hypothesized model is given the available data (Kenny and Milan 2012). The degrees of freedom in a model, which can be derived from the number of items of unknown information subtracted from the number of items of known information, is indicative of the identification of a model as just-identified models have 0 degrees of freedom while overidentified models have positive degrees of freedom and underidentified models have negative degrees of freedom. As model complexity increases, it becomes increasingly difficult to calculate the number of known items in a matrix. To simplify this calculation, Brown (2015) provides the equation $a = p\ (p + 1)/2$ where a is the number of elements of the input matrix and p is the number of indicators in the input matrix. Then, subtract the number of estimated parameters from a, resulting in the degrees of freedom from which one can determine the identification of the model.

For sample sizes of separate congeneric models for each of the first-order CFA latent constructs and means of individual observed indicators, refer to Table 3.1. The indicator variables are all dichotomous, coded to reflect the elements of outcasting as 1=present and 0=not present. In the initial evaluation of measurement models, parental closeness (P_2) and peer antipathy (F_3) are marker indicators for both males and females for their respective latent constructs. Sibling dependability (S_3) sibling trust (S_2) are the Sibling Outcasting marker indicators for males and females, respectively. The marker

indicators for Teacher Outcasting are teacher antipathy (T_4) for females and teacher disparagement (T_3) for males.

Parental Outcasting. The overall goodness-of-fit statistics for the congeneric model of Parental Outcasting in males suggest the data fit well with RMSEA = 0.039 (90% CI = 0.028–0.050, CFit = 0.956), CFI = 0.967, TLI = 0.944, SRMR = 0.061, but modification indices suggest the model would benefit from allowing correlated error terms between P_4 (disinterest) and P_5 (disparagement) and the correlations of these error terms appear to be conceptually valid. Adjusting for these correlated error terms in the male measurement model improves the model fit, but the modification indices further suggest correlating error terms between P_5 (disparagement) and P_6 (antipathy) which further improves the model fit statistics to RMSEA = 0.023 (90% CI = 0.009–0.036, CFit = 1.000), CFI = 0.991, TLI = 0.981, and SRMR = 0.037 (see Table 3.1) with standardized factor loadings ranging from 0.40 to 0.86 (see Figure 3.2 for all male standardized factor loadings) and all have a significant two-tailed p-value. Evaluation of the female model for Parental Outcasting produces goodness-of-fit statistics of RMSEA = 0.046 (90% CI = 0.035–0.057, CFit = 0.731), CFI = 0.976, TLI = 0.961, SRMR = 0.052. Modification indices show the female model will benefit from the correlation of

Table 3.1: Fit Indices for each First-order Congeneric Male Models

	N	RMSEA	CFI	TLI	SRMR
Parental Outcasting	2,912	0.023	0.991	0.981	0.037
Peer Outcasting	2,923	0.011	1.000	0.999	0.011
Sibling Outcasting	2,900	0.000	1.000	1.002	0.004
Teacher Outcasting	2,824	0.020	0.998	0.994	0.020

Source: KLAMS Generation II, Time I

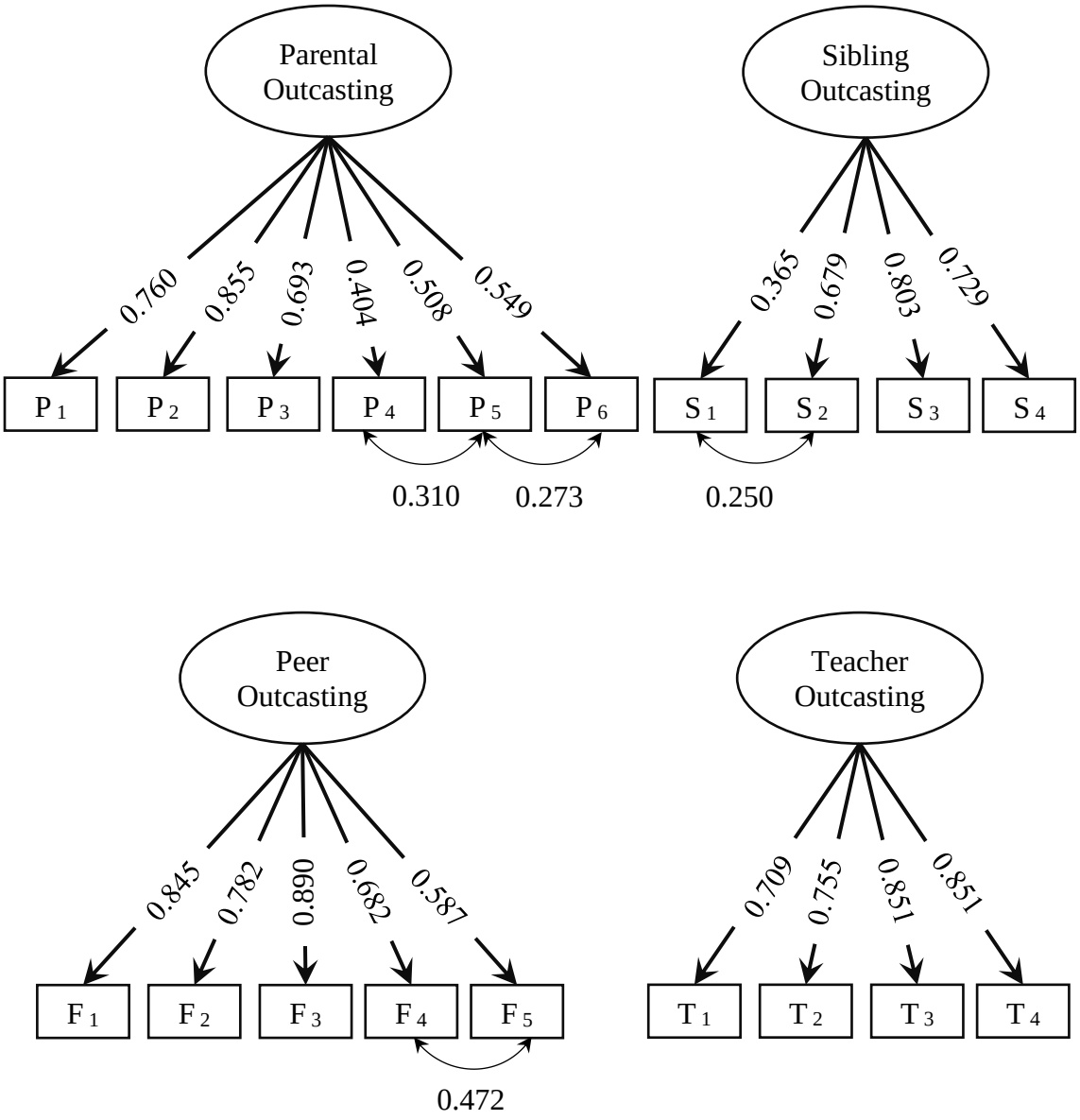

Figure 3.2: Male First-Order CFA Standardized Factor Loadings

P_2 and P_3 error terms. Inclusion of these correlated error terms produces standardized factor loadings ranging from 0.61 to 0.82 (see Figure 3.3 for all female standardized factor loadings), all of which have a significant two-tailed p-value, along with the following adjusted model fit statistics: RMSEA = 0.030 (90% CI = 0.018–0.042, CFit =

0.997), CFI = 0.991, TLI = 0.983, SRMR = 0.037 (see Table 3.2). The more restrictive H_0 model of equal factor loadings significantly degrades both the male and female model ($\chi2(5) = 75.218$, $p < 0.000$ and $\chi2(5) = 38.038$, $p < 0.000$, respectively). When evaluating the ME/I between males and females, the equal form model, configural model, or non-invariance model (identical factor structure – the number of factors and pattern of indicator-factor loadings are equal across groups) fits the data well with RMSEA = 0.026 (90% CI = 0.018–0.035, CFit = 1.000), CFI = 0.991, TLI = 0.983, SRMR = 0.037. The equality of factor loadings is often referred to as metric invariance or weak factorial invariance and the equality of indicator intercepts is sometimes referred to as scalar invariance or strong factorial invariance (Brown 2015). However, in the analysis of binary variables, equal factor loadings and equal intercepts (thresholds) cannot be tested separately, requiring a combined ME/I test evaluating the equality of factor loadings and intercepts simultaneously (Muthén and Muthén 1998-2017; Brown 2015). The ME/I model for Parental Outcasting produces $\chi2(4) = 1.274$, $p = 0.866$, indicating that the equal factor loadings and thresholds model does not significantly degrade model fit relative to the equal form model, concluding that the observed indicators evidence comparable relationships to the latent construct of Parental Outcasting across groups, meaning the measures have the same meaning and structure for both males and females.

Peer Outcasting. The latent construct of Peer Outcasting in males, with proposed correlation between F_4 (quantity of friends) and F_5 (ease at making friends) measurement errors, yielded overall goodness-of-fit statistics of RMSEA = 0.011 (90% CI = 0.000–

Table 3.2: Fit Indices for each First-order Congeneric Female Models

	N	RMSEA	CFI	TLI	SRMR
Parental Outcasting	2,831	0.030	0.991	0.983	0.037
Peer Outcasting	2,839	0.000	1.000	1.003	0.006
Sibling Outcasting	2,813	0.025	0.998	0.994	0.015
Teacher Outcasting	2,750	0.011	0.999	0.997	0.018

Source: KLAMS Generation II, Time I

0.032, CFit = 1.000), CFI = 1.000, TLI = 0.999, SRMR = 0.011 (see Table 3.1) with standardized factor loadings ranging from 0.59 to 0.89 (see Figure 3.2 for all male standardized factor loadings) and all have a significant two-tailed p-value. The female model produces goodness-of-fit statistics of RMSEA = 0.000 (90% CI = 0.000–0.013, CFit = 1.000), CFI = 1.000, TLI = 1.003, SRMR = 0.006 (see Table 3.2) and standardized factor loadings ranging from 0.51 to 0.92 (see Figure 3.3 for all female standardized factor loadings) and all have a significant two-tailed p-value. The more restrictive H_0 model of equal factor loadings significantly degrades both the male and female model ($\chi2(4) = 90.681$, $p < 0.000$ and $\chi2(4) = 95.225$, $p < 0.000$, respectively). The evaluation of ME/I in the latent construct of Peer Outcasting is promising with the non-invariance (equal form) model producing RMSEA = 0.000 (90% CI = 0.000–0.019, CFit = 1.000), CFI = 1.000, TLI = 1.001, SRMR = 0.009 and with $\chi2(3) = 6.866$, $p = 0.076$ the ME/I model indicates the measurement of Peer Outcasting has the same meaning and structure for both males and females.

Sibling Outcasting. The goodness-of-fit statistics for Sibling Outcasting are RMSEA = 0.069 (90% CI = 0.048–0.092, CFit = 0.067), CFI = 0.983, TLI = 0.949, SRMR = 0.034 in males. Modification indices for the male measurement model indicate

that correlated error terms between S_1 (conflict) and S_2 (trust) or between S_3 (dependability) and S_4 (affection) would benefit the model equally. Conceptually, siblings with high levels of conflict similarly have low levels of trust, but sibling affection and dependability seem less likely to be associated with each other. For this

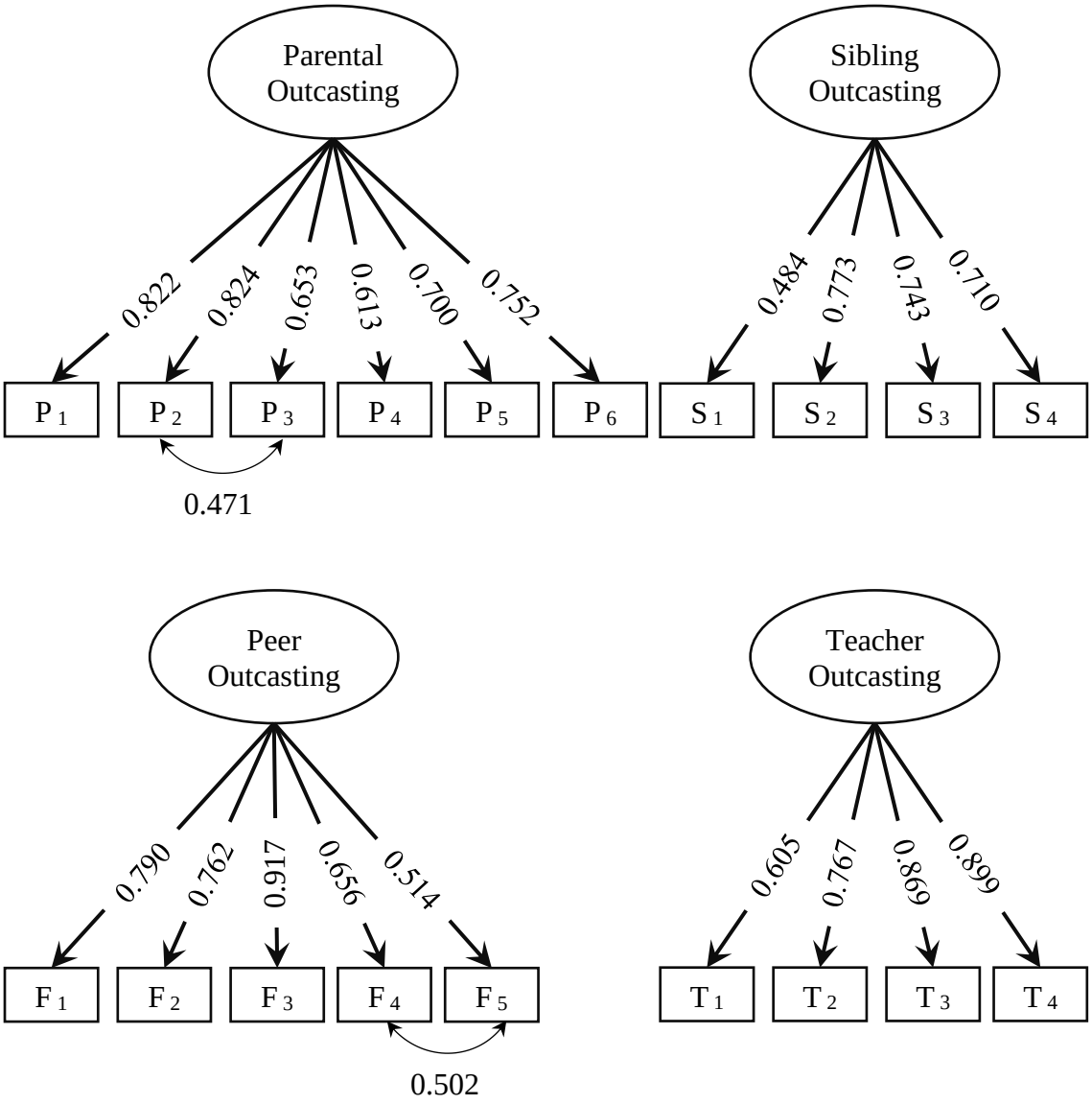

Figure 3.3: Female First-Order CFA Standardized Factor Loadings

reason, the error terms between sibling trust and conflict are allowed to be correlated producing adjusted goodness of fit statistics for the male measurement model of RMSEA = 0.000 (90% CI = 0.000–0.043, CFit = 0.978), CFI = 1.000, TLI = 1.002, SRMR = 0.004 (see Table 3.1) and standardized factor loadings ranging from 0.37 to 0.80 (see Figure 3.2 for all male standardized factor loadings) and all have a significant two-tailed p-value. The female measurement model produces the following goodness-of-fit statistics: RMSEA = 0.025 (90% CI = 0.000–0.051, CFit = 0.944), CFI = 0.998, TLI = 0.994, SRMR = 0.015 (see Table 3.2) and standardized factor loadings ranging from 0.48 to 0.77 (see Figure 3.3 for all female standardized factor loadings), all having a significant two-tailed p-value, with no indications of strain from the modification indices. The factor loading of sibling conflict S_1 in the congeneric CFA model for males loads above the 0.4 cutoff point at 0.442 prior to allowing the error terms for S_1 and S_2 to correlate where it drops to 0.365. With the error terms correlated, this value appears to be a bit low but still retains its statistical significance in the model. In addition to being statistically significant in the congeneric CFA model, the inclusion of this indicator is conceptually rational and, shown later, is invariant with the female congeneric CFA model (which exceeds the 0.4 cutoff value) and exceeds the 0.4 cutoff value in both the full 4-factor CFA model and second-order CFA model for males. The more restrictive H_0 model of equal factor loadings significantly degrades both the male and female model ($\chi2(3) = 127.134$, $p < 0.000$ and $\chi2(3) = 79.246$, $p < 0.000$, respectively). The equal form model for Sibling Outcasting indicates a good fitting model with RMSEA = 0.019 (90% CI = 0.000–0.041, CFit = 0.993), CFI = 0.999, TLI = 0.996, SRMR = 0.011.

However, when testing for ME/I, the model produces $\chi 2(2) = 14.493$, $p < 0.001$ indicating a difference between males and females in the meaning or structure of the latent measure. It appears sibling trust (S_2) is the noninvariant indicator. With full invariance failing to hold, a test of partial measurement invariance is conducted. Because S_2 was used as the marker variable for the female model and found to be noninvariant across groups, for the analysis of partial invariance the female model will use the male model marker indicator of S_3. The indicator chosen as the marker variable does not have an effect on the model fit statistics except when testing for partial invariance – the invariant variable cannot be the marker indicator. This means that regardless of whether S_2 or S_3 was the marker indicator in the first two steps of evaluating ME/I, the model would have produced the same model fit statistics. Testing the partial invariance of Sibling Outcasting by allowing the non-invariant variable to be freely estimated in both groups but holding all factor loadings equivalent produces $\chi 2(1) = 0.233$, $p = 0.629$ which indicates that other than the indicator of sibling trust, all three other indicators are invariant between genders. If one wanted to ensure the correct non-invariant indictor was detected, the same test can be repeated with each of the other variables. If the correct non-invariant indicator was identified, each of the tests would produce a significant chi-square difference test indicating the problematic variable was still being held equal in both models.

Teacher Outcasting. Lastly, Teacher Outcasting in males producing significant two-tailed p-value standardized factor loadings between 0.71 and 0.85 (see Figure 3.2 for all male standardized factor loadings) with goodness-of-fit statistics of RMSEA =

0.020 (90% CI = 0.000–0.047, CFit = 0.971), CFI = 0.998, TLI = 0.994, SRMR = 0.020 (see Table 3.1). The model fit statistics for females are RMSEA = 0.011 (90% CI = 0.000–0.041, CFit = 0.989), CFI = 0.999, TLI = 0.997, SRMR = 0.018 (see Table 3.2) with all standardized factor loadings producing significant two-tailed p-value and ranging from 0.61 to 0.90 (see Figure 3.3 for all female standardized factor loadings). The modification indices indicate no areas of model strain for either group. The more restrictive H_0 model of equal factor loadings significantly degrades both the male and female model ($\chi2(3) = 13.239$, $p = 0.004$ and $\chi2(4) = 26.431$, $p < 0.000$, respectively). The latent construct of Teacher Outcasting has a good fitting equal form model for males and females with RMSEA = 0.016 (90% CI = 0.000–0.036, CFit = 0.999), CFI = 0.998, TLI = 0.995, and SRMR = 0.019 and $\chi2(2) =2.346$, $p = 0.310$ for the fully invariant model.

First-Order Full Model. When running the full four factor first-order model for males and females separately, overall goodness-of-fit indices indicate a preferred model yielding statistics of RMSEA = 0.019 (90% CI = 0.016–0.023, CFit = 1.000), CFI = 0.979, TLI = 0.975, SRMR = 0.058 for males and for females these statistics are RMSEA = 0.016 (90% CI = 0.013–0.019, CFit = 1.000), CFI = 0.984, TLI = 0.981, SRMR = 0.059. Additionally, all standardized factor loadings are significant for both groups producing loadings ranging from 0.42 to 0.89 for males and 0.51 to 0.91 for females. When comparing the more restrictive equal factor loading model (Brown 2015), the restrictive equal variance model (Wang and Wang 2012), or the restrictive zero-covariance model (Muthén and Muthén 1998-2017) to the congeneric first order

four-factor model, the equal factor model ($\chi2(15)$ =221.173, $p < 0.000$ for males, and $\chi2(15) = 180.962$, $p < 0.000$ for females), equal variance model ($\chi2(3) = 25.863$, $p < 0.000$ for males, and $\chi2(3) = 9.716$, $p = 0.021$ for females), and zero-covariance model ($\chi2(6) = 409.570$, $p < 0.000$ for males, and $\chi2(6) = 332.990$, $p < 0.000$ for females) all significantly degrade the congeneric model for both genders. Correlations between all latent construct appear to be significant for both males and females. Additionally, tests for ME/I suggest the model the number of factors and pattern of indicator-factor loadings are equal across groups with RMSEA = 0.018 (90% CI = 0.016–0.020, CFit = 1.000), CFI = 0.981, TLI = 0.978, and SRMR = 0.058 and $\chi2(11)$ =16.996, $p = 0.108$ indicates a comparable relationship of the observed variables to the four-factor latent construct across groups with male and female measurement having the same meaning and structure.

Second-Order Full Model. Suggested earlier, it is hypothesized here that the four first-order latent variables of Parental, Peer, Sibling, and Teacher Outcasting are indicators of a second-order factor of GSO. Because the first order factors are dependent variables, a variance is not estimated for them, rather the variance of their residuals is estimated. The second-order estimation indicates a preferred fitting model with the data producing fit statistics of RMSEA = 0.023 (90% CI = 0.020–0.026, CFit = 1.000), CFI = 0.970, TLI = 0.964, and SRMR = 0.064 with significant standardized factor loadings between 0.41 and 0.73 for males (see Figure 3.4 and Table 3.3) and RMSEA = 0.018 (90% CI = 0.015–0.022, CFit = 1.000), CFI = 0.979, TLI = 0.975, and SRMR = 0.065 with significant for standardized factor loadings ranging from 0.43 and 0.78 females (see

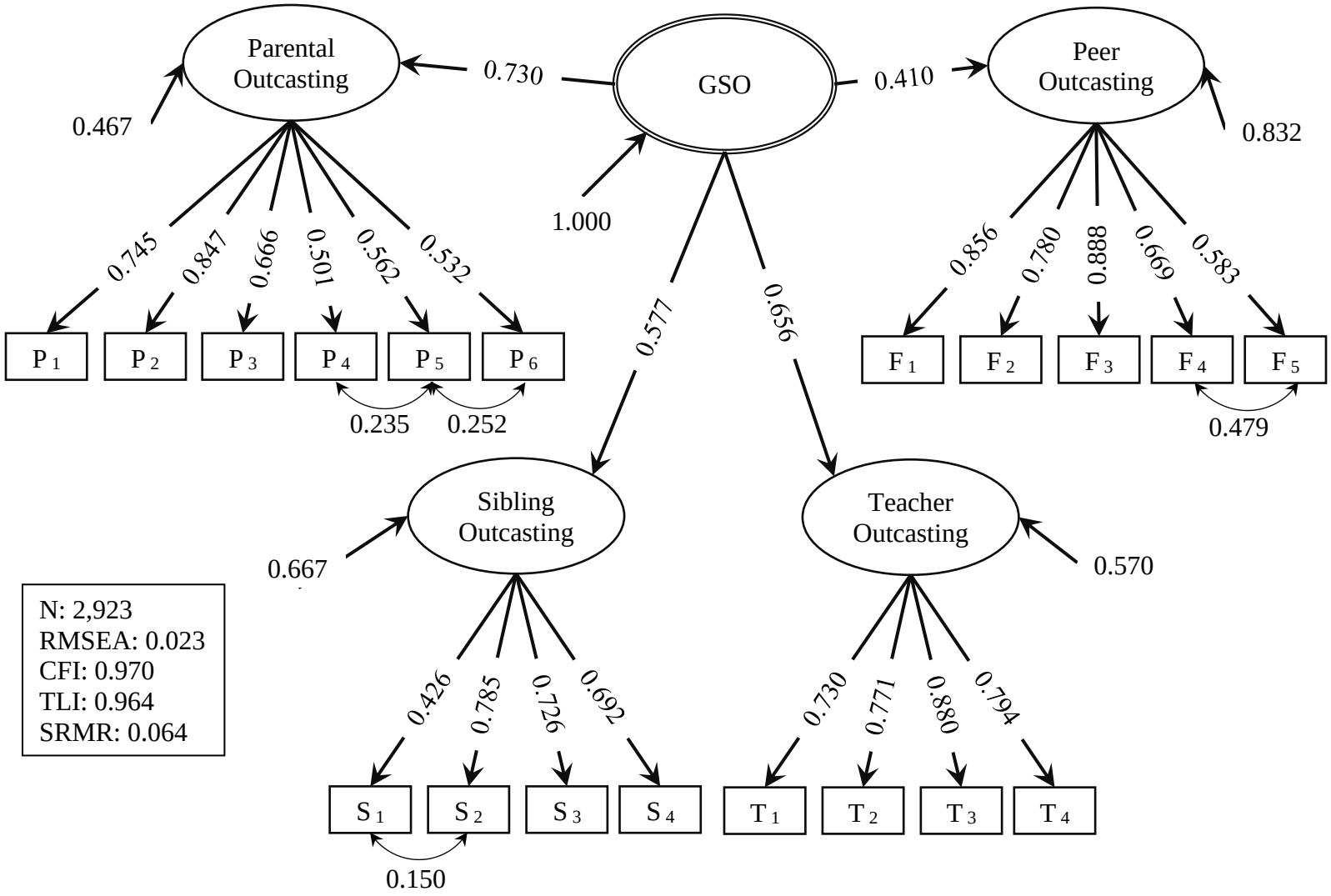

Figure 3.4: Male Measurement Model for Second-Order Global Social Outcasting

Table 3.3: Second-Order Confirmatory Factor Analysis Completely Standardized Factor Loadings, R^2, and Residual Variances for Males and Females

	Males			Females		
	STDYX	R^2	Residual Variance	STDYX	R^2	Residual Variance
Parental Outcasting						
P_1	0.745	0.555	0.445	0.826	0.683	0.317
P_2	0.847	0.717	0.283	0.790	0.624	0.376
P_3	0.666	0.443	0.557	0.660	0.435	0.565
P_4	0.501	0.251	0.749	0.623	0.388	0.612
P_5	0.562	0.316	0.684	0.728	0.529	0.471
P_6	0.532	0.283	0.717	0.750	0.563	0.437
Peer Outcasting						
F_1	0.856	0.733	0.267	0.791	0.626	0.374
F_2	0.780	0.608	0.392	0.763	0.582	0.418
F_3	0.888	0.788	0.212	0.906	0.820	0.180
F_4	0.669	0.448	0.552	0.660	0.436	0.564
F_5	0.583	0.340	0.660	0.529	0.280	0.720
Sibling Outcasting						
S_1	0.426	0.182	0.818	0.513	0.263	0.737
S_2	0.785	0.617	0.383	0.834	0.695	0.305
S_3	0.726	0.527	0.473	0.715	0.511	0.489
S_4	0.692	0.478	0.522	0.656	0.430	0.570
Teacher Outcasting						
T_1	0.730	0.533	0.467	0.624	0.390	0.610
T_2	0.771	0.594	0.406	0.784	0.614	0.386
T_3	0.880	0.775	0.225	0.859	0.738	0.262
T_4	0.794	0.630	0.370	0.885	0.783	0.217
Global Social Outcasting						
Parental Outcasting	0.730	0.533	0.467	0.662	0.438	0.562
Peer Outcasting	0.410	0.168	0.832	0.426	0.182	0.818
Sibling Outcasting	0.577	0.333	0.667	0.508	0.258	0.742
Teacher Outcasting	0.656	0.430	0.570	0.775	0.601	0.399

Source: KLAMS data, Generation II, Time I

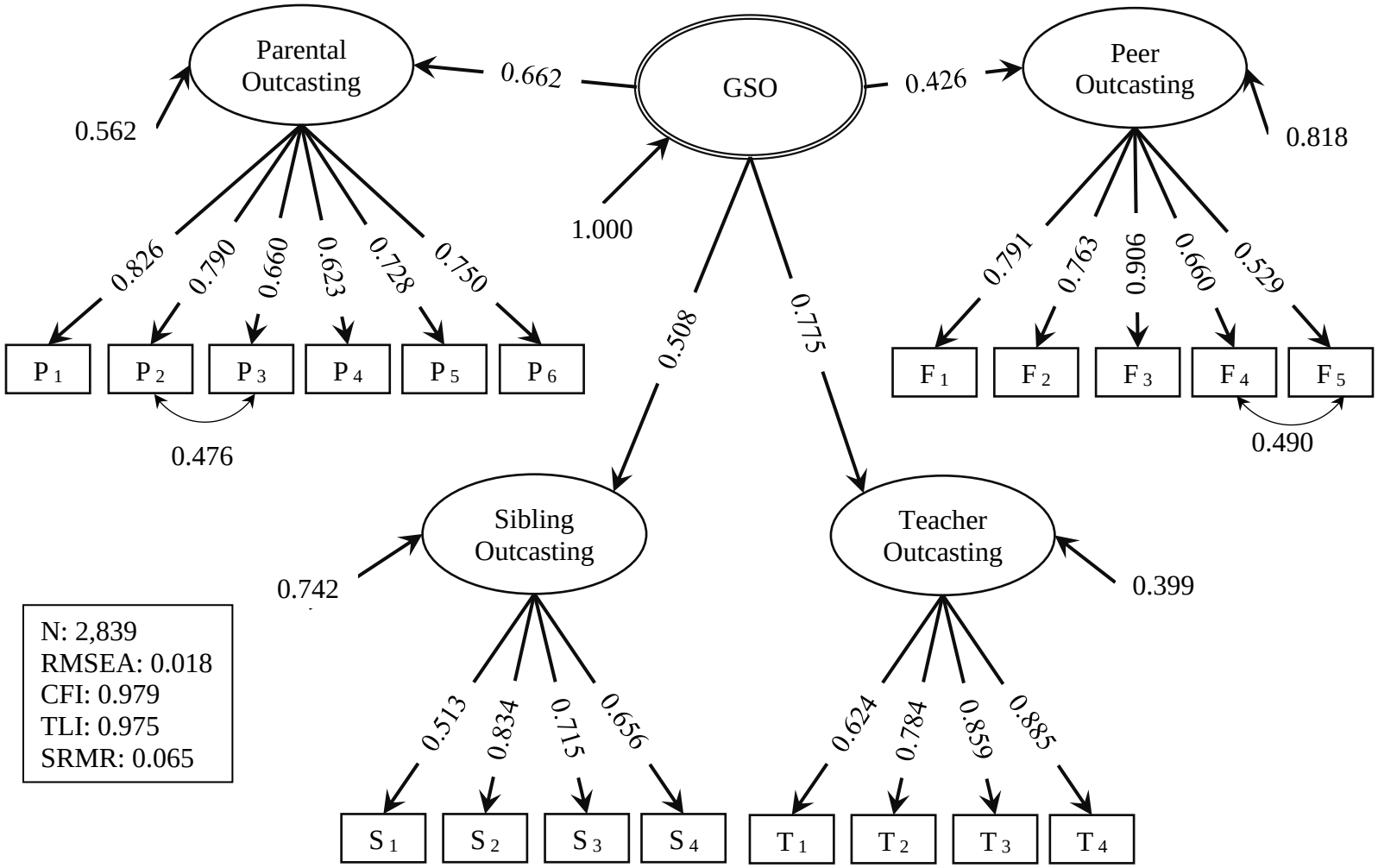

Figure 3.5: Female Measurement Model for Second-Order Global Social Outcasting

Figure 3.5 and Table 3.3). Both the male and female models are significantly degraded by the restriction of equal factor loadings yielding $\chi 2(14) = 130.570$, $p = 0.000$ and $\chi 2(14) = 110.934$, $p = 0.000$, respectively. Evaluation of the second-order latent construct ME/I indicates equal number of factors and pattern of indicator-factor loadings across genders (RMSEA = 0.021 (90% CI = 0.019–0.023, CFit = 1.000), CFI = 0.974, TLI = 0.969, and SRMR = 0.064) and equal meaning and structure of the measurement for both males and females $\chi 2(17) = 21.685$, $p = 0.197$. These findings suggest support for the hypothesis that the latent variables of Parental Outcasting, Peer Outcasting, Sibling Outcasting, and Teacher Outcasting are indicators of a higher-order construct of GSO. Henceforth, this finding also suggests substantiation that ostracism, rejection, interpersonal exclusion, and other forms of outcasting experienced in adolescence often proliferate from one social domain into other spheres of activity. It is important to note that while this may be the case for adolescents, adults who experience outcasting may not suffer the same consequence. Further research is suggested to determine the longitudinal effects of adolescent outcasting and outcasting in adulthood.

CFA Results for Respondents without Siblings

The initial analytic plan was to conduct a separate analysis without Sibling Outcasting in the model for respondents who indicated he or she did not have siblings. However, several issues occurred during analysis including multicollinearity among conceptually unrelated observed variables, high level of bivariate analyses with empty cells or extremely low incidence, and convergence issues, likely related to a low number of participants responding to observed variables indicating experiencing outcasting. A

two-sample test of proportions was conducted for each observed indicator comparing the proportion of non-sibling participants who experienced outcasting to the proportion of sibling-having participants who experienced outcasting, but the only significant difference was F_3 for females. Further, two-sample t-tests were conducted to compare the mean of summed observed indicators for each domain of outcasting resulting in no statistically significant difference. However, while no statistically significant difference may exist between indicators for participants with and without siblings, that doesn't mean that a meaningful number of participants without siblings reported experiencing outcasting. For example, the two-sample test of proportions for T_2 indicated there is no significant difference between female participants with and without siblings, but 51 female participants with siblings reported experiencing this outcasting while only 1 female participant without a sibling reported experiencing this outcasting. Unable to conduct a full analysis of participants without siblings, a first-order CFA is still possible for each of the independent domains of social outcasting. This introduces the question how different is the measurement of outcasting between individuals with and without siblings? The following analysis conducts a CFA of the individual latent constructs of Parental Outcasting, Peer Outcasting, and Teacher Outcasting for each gender and follows the established models with tests of ME/I between participants with and without siblings.

Parental Outcasting. Using P_1 (understanding) as the marker indicator, the initial model fit statistics for Parental Outcasting for male respondents who did not report having any siblings indicated an inadequate fitting model (RMSEA = 0.167 (90%

CI = 0.129–0.207, CFit = 0.000), CFI = 0.741, TLI = 0.569, SRMR = 0.183, but modification indices suggest correlating between the error terms for P_3 (shared activities) and P_6 (antipathy), between the error terms for P_4 (disinterest) and P_6 (antipathy), and between the error terms of P_2 (closeness) and P_3 (shared activities), all which are conceptually valid. Adjusted model fit statistics indicate a much better fitting model for male Parental Outcasting with RMSEA = 0.066 (90% CI = 0.000–0.123, CFit = 0.275), CFI = 0.973, TLI = 0.933, SRMR = 0.115 with standardized factor loadings ranging from 0.34 to 0.87 and no suggestions for modification. With a small sample size such as this one, the SRMR of a CFA with categorical indicators becomes increasingly inaccurate and is no longer meaningful (Yu 2002). Female Parental Outcasting, using P_2 (closeness) as the marker indicator, offered more promising model fit results with initial evaluations of RMSEA = 0.000 (90% CI = 0.000–0.074, CFit = 0.797), CFI = 1.000, TLI = 1.008, SRMR = 0.117, standardized factor loadings between 0.33 and 0.88 and modification indices offering no indications of model strain. The equal form model indicates a good fit between groups for males with and without siblings (N=3,124) RMSEA = 0.027 (90% CI = 0.013–0.041, CFit = 0.997), CFI = 0.989, TLI = 0.974, SRMR = 0.047 and females with and without siblings (N=3,050) RMSEA = 0.020 (90% CI = 0.001–0.033, CFit = 1.000), CFI = 0.996, TLI = 0.992, SRMR = 0.047 and the ME/I models (Males: $\chi2(4) = 6.723$, $p = 0.151$; Females: $\chi2(4) = 3.462$, $p = 0.484$) offers support that the measures for Parental Outcasting have the same meaning and structure for males and females with and without siblings.

Peer Outcasting. For both males and females, the fit statistics indicate the model fits the data well with RMSEA = 0.000 (90% CI = 0.000–0.088, CFit = 0.751), CFI = 1.000, TLI = 1.004, SRMR = 0.043 for males and RMSEA = 0.048 (90% CI = 0.000–0.113, CFit = 0.675), CFI = 0.989, TLI = 0.977, SRMR = 0.059 for females with F_1 (disparagement) and F_3 (antipathy) as marker indicators, respectively. The modification indices did not illuminate any areas of measurement strain for either males or females and standardized factor loadings ranged from 0.54 to 0.96 for males and from 0.67 to 0.92 for females. The equal form model indicates a good fitting model for both groups with RMSEA = 0.007 (90% CI = 0.000–0.030, CFit = 1.000), CFI = 1.000, TLI = 1.000, SRMR = 0.016 for males (N=3,137) and RMSEA = 0.000 (90% CI = 0.000–0.029, CFit = 0.673), CFI = 1.000, TLI = 1.000, SRMR = 0.017 for females (N=3,058). The test of ME/I suggest support for equivalent measures across groups for males ($\chi 2(3) = 1.041$, $p = 0.791$) and females ($\chi 2(3) = 2.253$, $p = 0.522$).

Teacher Outcasting. The model fit for both males (RMSEA = 0.050 (90% CI = 0.000–0.155, CFit = 0.380), CFI = 0.994, TLI = 0.981, SRMR = 0.062) and females (RMSEA = 0.000 (90% CI = 0.000–0.114, CFit = 0.709), CFI = 1.000, TLI = 1.019, SRMR = 0.038) indicate a model that fits the data well with no areas of measurement strain suggested. Standardized factor loadings for male perception of Teacher Outcasting are between 0.67 and 0.96 and 0.55 and 0.86 for females. When testing the ME/I, the equal form model yields results suggesting a good fitting model for both groups RMSEA = 0.022 (90% CI = 0.000–0.049, CFit = 0.958), CFI = 0.997, TLI = 0.992, SRMR = 0.025 for males (N=3,033) and RMSEA = 0.000 (90% CI = 0.000–

0.039, CFit = 0.992), CFI = 1.000, TLI = 1.000, SRMR = 0.020 for females (N=2,966). Despite an absence of information in cells for T_2, the female test for equivalence between groups for perceptions of Teacher Outcasting ($\chi2(2) = 0.705$, $p = 0.703$) indicate equivalent measurement meaning and structure across groups, whereas the male equivalence test breaches significance at $\chi2(2) = 6.553$, $p = 0.0378$. The modification indices offer no suggestions for the possible invariant observed indicator, but a test of partial invariance for each observed measure indicate that allowing either T_2 or T_4 to be freely estimated produced measurement invariance and that T_1 fails to converge.

Social Correlates Structural Equation Model Results

Given the problematic analysis of first-order CFA models for participants without siblings, evaluation of the subsequent structural models is conducted using the sample of participants reporting having at least one sibling (2,923 males and 2,839 females). As with the measures involved in creating a latent construct of GSO, some social correlates included in this study are also constructed using CFA, but unlike GSO these latent constructs only involve first-order CFA. In measuring the association with delinquent friends, for both males and females there is a relationship proposed between petty theft under $2 ($DF_1$) and shoplifting ($DF_{10}$), between the four substance use indictors (cigarettes, marijuana, crack, and narcotics). Using DF_5 (marijuana use) as the marker indicator, this produced preferred models with RMSEA = 0.029 (90% CI = 0.024–0.033, CFit = 1.000), CFI = 0.990, TLI = 0.988, SRMR = 0.042 for males and RMSEA = 0.026 (90% CI = 0.021–0.031, CFit = 1.000), CFI = 0.987, TLI = 0.984, SRMR = 0.057 for females, but modification indices suggest the male model would

significantly benefit from allowing the error terms DF_2 and DF_4 to correlate. This adjusted the male model fit to RMSEA = 0.024 (90% CI = 0.019–0.029, CFit = 1.000), CFI = 0.993, TLI = 0.991, SRMR = 0.041. All standardized factor loadings for both males and females are significant and exceed the 0.4 cutoff value.

Many elements of a neighborhood are interrelated. Some of the more salient relationships proposed in the measurement of perceived neighborhood problems for the current study are between high unemployment (H_1) and the presence of "winos and junkies" (H_3), prostitution (H_4), abandoned houses (H_5), and run-down buildings and yards (H_9). Additionally, it seems reasonable to that abandoned houses (H_5) are related to the presence of run-down buildings and yards (H_9) and that the presence of winos and junkies (H_3) may be related to a presence of run-down buildings and ill-kept yards (H_9). Lastly, the presence of gangs (H_{12}), organized crime (H_{10}), and conflict between different racial or cultural groups (H_2) are proposed to be associated with each other. These proposed relationships necessitate the allowance of correlated error terms and are not dependent on gender. The model measuring perceived neighborhood problems uses H_{11} (perceived presence of assaults and muggings) as the marker indicator producing factor loadings from 0.66 to 0.89 and produce preferred models with RMSEA = 0.034 (90% CI = 0.029–0.039, CFit = 1.000), CFI = 0.990, TLI = 0.986, SRMR = 0.037 for males and RMSEA = 0.040 (90% CI = 0.035–0.045, CFit = 1.000), CFI = 0.988, TLI = 0.982, SRMR = 0.039 with all factor loadings significant and exceeding the 0.4 cutoff value.

Bivariate analysis evaluating the individual influences of social correlates on the gendered experience of GSO indicate a positive and significant influence of age, associating with delinquent peers, impulsivity, and perceived neighborhood problems on the level of GSO experienced. Health and socioeconomic status (measured through parental education) have a negative and significant influence on the level of experienced GSO, regardless of gender. The influence of gender on GSO was evaluated using a nongendered model (gender → GSO), resulting in a significant and positive bivariate association, meaning being male was more associated higher levels of experiencing GSO. For males, race does not significantly influence levels of experienced GSO, meaning that males of every race experience similar levels of GSO. Being a Black ($\beta = 0.114$ $p < 0.000$), Hispanic ($\beta = 0.070$ $p = 0.028$), or "Other" race/ethnicity ($\beta = 0.082$ $p = 0.001$) female, when compared to White females, was positively associated with levels of experienced GSO. Compared to Black females, Hispanic females, which includes respondents indicating he or she identifies as Mexican American, Mexican National, Cuban, Puerto Rican, or Other Spanish-speaking ethnicity, did not differ significantly. However, females identified as "other" race/ethnicity, comprised of respondents who indicated he or she identifies as Japanese, Chinese, Vietnamese, "Other Oriental," Indian (from India), American Indian, or other group not identified, compared to Black females, showed significantly greater positive association with the level of experienced GSO. There is also a stronger positive association to the level of GSO experienced for females identified as "Other" race/ethnicity when compared to Hispanic females. However,

individuals identified as “Other” race/ethnicity are not strongly represented in the sample with only 26 females and 29 males with siblings are in this category.

The initial model evaluating social correlates was restricted to primarily demographic variables that included age, race/ethnicity, and socioeconomic status (see Table 3.4). The marker indicator for sibling outcasting in males is adjusted to sibling trust (S_2) with the remaining marker indicators unchanged. Results indicate a significant association of age and socioeconomic status (using parental education as a proxy) to GSO regardless of gender, age in the positive direction and socioeconomic status in the negative. Being a Black or “Other” race female, compared to White female, is also

Table 3.4: Gendered Effects of Social Correlates on Perception of Global Social Outcasting

	Males (N=2,923)		Females (N=2,839)	
Age	0.173***	-0.036	0.248***	0.010
Race/Ethnicity				
Black	-0.030	-0.046	0.076**	0.014
Hispanic	0.002	0.025	-0.015	0.006
Other	0.000	-0.012	0.060*	0.056*
Parental Education	-0.133***	0.013	-0.263***	-0.092*
Impulsivity		0.230***		0.253***
Health		-0.035		-0.114***
Delinquent Peers (1-12)		0.362***		0.305***
Perceived Neighborhood Problems (1-12)		0.214***		0.228***
Fit Statistics				
RMSEA	0.037	0.024	0.031	0.021
CFI	0.879	0.944	0.911	0.953
TLI	0.862	0.939	0.898	0.949
SRMR	0.075	0.072	0.071	0.076

Source: KLAMS Generation I, Time VII and Generation II, Time I

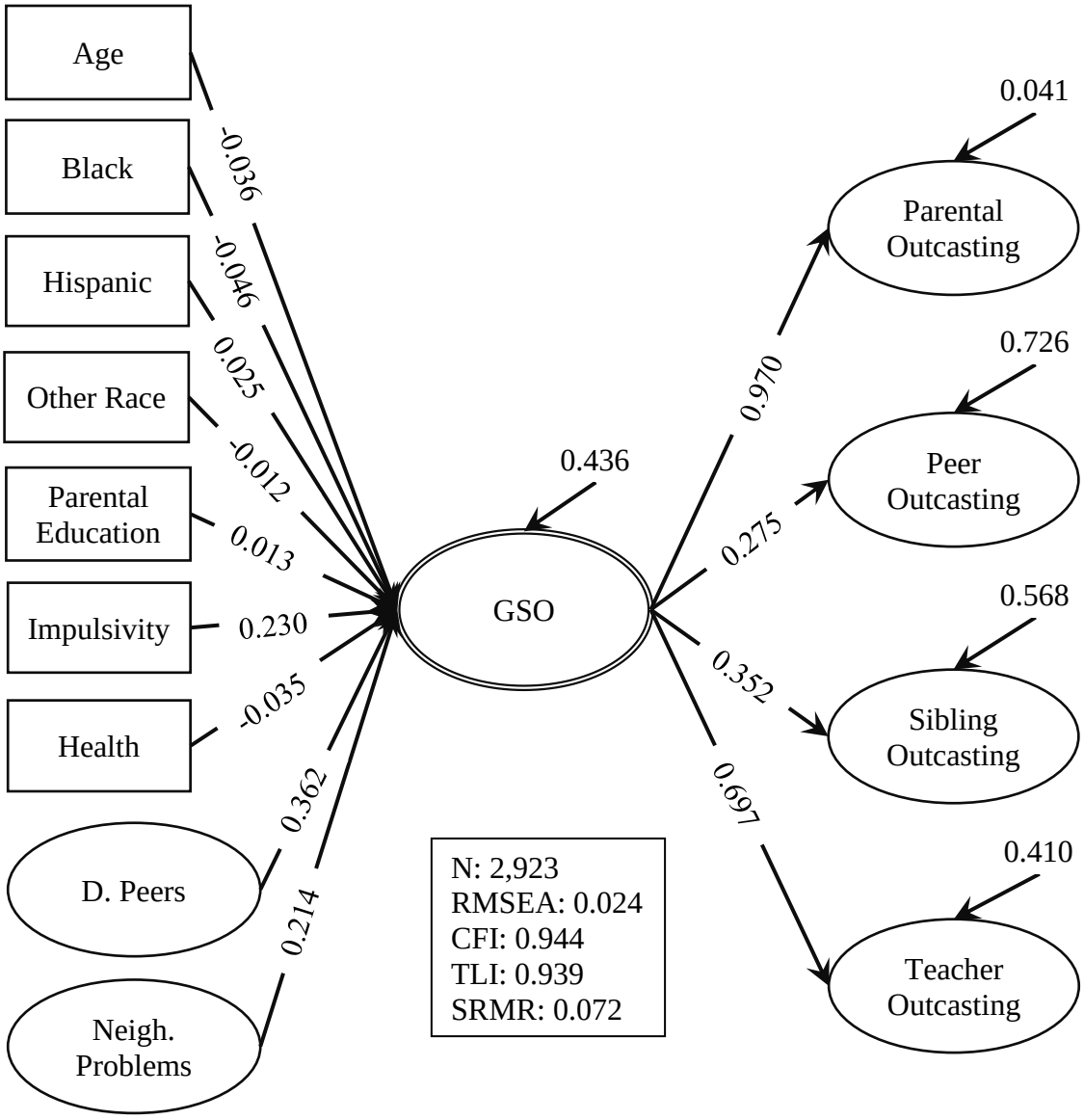

Figure 3.6: Male Structural Model. (Measurement models and correlated errors omitted)

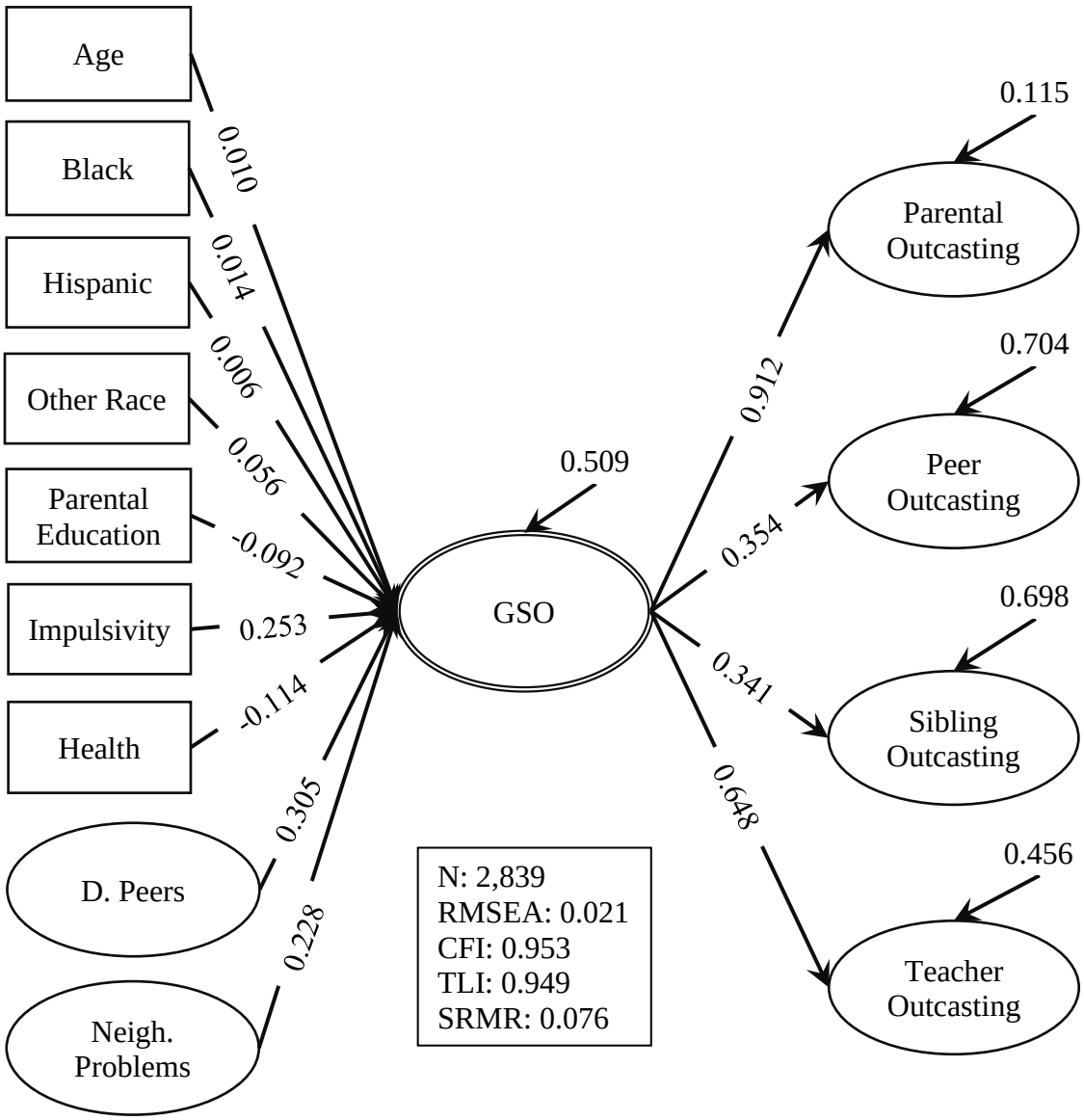

Figure 3.7: Female Structural Model. (Measurement models and correlated errors omitted)

associated with experiencing greater levels of GSO. Again, females identifying as "Other" race are only represented by 26 females in the model.

When running the full structural equation model, there are many related social constructs with error terms allowed to be correlated. Respondents impulsivity, health, and age are allowed to have correlated error terms (Steinberg, Albert, Cauffman, Banich, Graham, Woolard 2008; Stoltenberg, Batien, and Birgenheir 2008). The error terms for social correlates that are related to cumulative social disadvantage, such as perceived neighborhood problems, race, health, and parental education all have correlating error terms (Bauman, Silver, and Stein 2006) while the measure of perceived neighborhood problems is also allowed to have correlating error terms with delinquent peers.

In addition to the above correlated error terms, based on the gender gap in delinquency, the nongendered model evaluating the influence of gender on GSO was allowed to have correlating error terms between gender and associating with delinquent peers. The nongendered model of GSO produced nearly a preferred fit with RMSEA = 0.023 (90% CI = 0.023–0.024, CFit = 1.000), CFI = 0.947, TLI = 0.942, SRMR = 0.062. With all social correlates included in the model and correlating error terms between gender and delinquent peers, there was no significance difference between genders in the experience of GSO.

Results for the full SEM indicate the model fits the data reasonably well for both males and females, but modification indices suggest that allowing the error terms between age and perceived neighborhood problems would significantly improve both models. This is a conceptually reasonable correlation because as adolescents age

increases and they gain autonomy from their parents, they also become more aware of the neighborhood environment, either from more exposure or greater understanding. Allowing these error terms to correlate nearly produces a preferred model fit for both males (see Figure 3.6) and females (see Figure 3.7). With the inclusion of variables measuring perceived neighborhood problems, associating with delinquent peers, impulsivity, and health, the association between age and GSO becomes nonsignificant for both males and females. The association between socioeconomic status and GSO becomes nonsignificant for males, but remains significant for females at a significance level nearing $p < 0.01$. The association between race and GSO remains nonsignificant for males and, with the exception of females identified as "Other" race, becomes nonsignificant for females with the inclusion of the additional social correlates. Shown in Table 3.4, associating with delinquent peers ($\beta = 0.362$ $p < 0.000$), perceived neighborhood problems ($\beta = 0.214$ $p < 0.000$), and impulsivity ($\beta = 0.230$ $p < 0.000$) have a significant positive influence on perceived GSO in males. Similarly, females' perceptions of experiencing GSO are significantly and positively influenced by associating with delinquent friends ($\beta = 0.305$ $p < 0.000$), perceived neighborhood problems ($\beta = 0.228$ $p < 0.000$), and impulsivity ($\beta = 0.253$ $p < 0.000$) while a significant negative relationship exists with health ($\beta = -0.114$ $p < 0.000$) and socioeconomic status (parental education) ($\beta = -0.012$ $p = 0.012$). Additionally, females identifying as "Other" race/ethnicity, when compared to White females, indicate higher levels of experiencing GSO ($\beta = 0.056$ $p = 0.011$) but this group of participants is only represented by 26 females, a sample too small for any meaningful interpretation. More

importantly, once all social correlates are controlled, no significant differences exist for race/ethnicity, regardless of reference category, for neither males nor females.

Discussion

The results from the second-order CFA of participants with siblings offer support for the assertion that adolescents who experience outcasting in one social domain also experience outcasting in other social domains, resulting in the experience of a global social outcasting. Initial first-order gendered CFAs were conducted with outcasting in separate social domains to establish a prima facie measure model for social domains involving parents, peers, siblings, and teachers. Each of the first-order CFAs for the separate social domains were tested as confirmed as invariant, or equivalent across genders. A full four-factor gendered first-order CFA model was then estimated to evaluate and establish correlation between the first-order latent variables. Estimation resulted in a preferred model fit, supporting the four-factor model for both males and females. The gendered models were again found to be invariant across genders. Finally, a second-order model of GSO was estimated for each gender separately resulting in preferred fitting gendered models and equivalence between genders was again supported.

Initially, analyses were to be done for two different samples from the data – those with siblings and those without – in which the latent construct measuring Sibling Outcasting was only included for those participants reporting having siblings. First-order congeneric CFA models for Parental Outcasting and Peer Outcasting were successfully established for participants without siblings. However, despite F_3 for

females being the only indicator that tested as having a significant difference between participants with and without siblings, the models evaluated without siblings for Teacher Outcasting were problematic for both males and females, possibly from a sample size too low for analysis reflected in low counts of reported outcasting in discrete social domains by adolescents without siblings. Tests of measurement equivalence or invariance between models of participants with and without siblings showed substantial support for equality of measurement meaning and structure across groups for all models except perceived Teacher Outcasting for males, which showed in partial invariance. Despite the promising finding for measurement equivalence, caution is urged in interpreting the results of this study for adolescence without siblings as the second-order CFA model of GSO for participants with siblings and without siblings are not nested models and cannot be tested for equivalence.

Once a gender invariant second-order CFA model with preferred fit statistics was created for GSO, the influence of gender on GSO was evaluated. Bivariate estimations produced results that indicate a positive and significant influence of gender on GSO, meaning that being male is significantly associated with increased levels of experiencing GSO. However, after the inclusion of all social correlates and the error terms between gender and association with delinquent peers correlating, this finding became nonsignificant.

The initial multivariate model, examining demographic variables before including other social correlates, found a positive influence from age and a negative influence from socioeconomic status on the level of GSO experienced by adolescents,

regardless of gender. Only for females did race have any influence on the level of GSO experienced – being a Black female was more strongly associated with the level of GSO compared to being a White female.

When including the remaining social correlates in the analysis, the significant influence of race in females and socioeconomic status in males becomes nonsignificant, but socioeconomic status remains significant for females. Association with delinquent peers, impulsivity, and perceived neighborhood problems are positively related to GSO, regardless of gender. As adolescents associate with delinquent peers, his or her level of experience with GSO also increases. The causal direction of this relationship is not tested in this study, but Thornberry (1987) suggests this may be a reciprocal relationship. Consequently, there exists at least two possibilities for this relationship. First, it may be that as adolescents increasingly associate with delinquent peers, a status perception likely shared among other peers, the experience of marginality associated with being a delinquent adolescent is conveyed on the participant, much in the way those who associate with stigmatized individuals are often granted a "courtesy stigma" (Goffman 1963). Alternatively, as individuals increase in their experience of GSO, they become less accepted by those who adhere to conventional norms and values, and begin to find acceptance and belonging among more marginalized peers (Becker 1963).

Impulsivity is also positively associated with increases in adolescent GSO. While the causal direction of this relationship is also not evaluated in this study, it is conceptually unreasonable that GSO increases impulsivity. Rather, it is more conceptually rational to infer that impulsivity in adolescents is related to higher levels of

experiencing GSO. This finding is not surprising as mentioned in an earlier example, individuals with ADHD, who are often characterized as impulsive, habitually have a difficult time creating and maintaining friendship with peers due to his or her behavioral excesses (Landau et al. 1998).

Increases in socioeconomic status (measured through parental education) for female participants is associated with decreases in the experience of adolescent GSO. There may be a variety of reasons for this relationship from several social domains. First, parental education is often associated with social status. It may be that membership within a particular social status is perceived more positively by one's peers and teachers, thus decreasing levels of experienced of GSO. Alternately, parental education is also typically associated with parental income. As parental education decreases, parental income also decreases, which may result in the parents of the participant being required to spend more time away from home to support his or her family. This time spent away from home and family is sometimes interpreted by children and adolescents as parental devaluation of relational value, which may then transition into perceptions of parental outcasting. Additionally, parents who are working longer hours or more jobs to support their family are allotted less time to be involved in their children's education. This decrease in parental involvement in their child's education may result in poor academic performance. Due to the stigma of parental absenteeism in a child's education, possibly realized indirectly through poor academic performance from the student, students may experience negative relations with educators. There was no significant association found for parental education in the male

sample. Perceived neighborhood problems also significantly impacted adolescent experiences of GSO regardless of gender. Many of the same reasons for the significant association between GSO and parental education can be applied to perceived neighborhood problems as well.

Lastly, female experiences of adolescent GSO were significantly and negatively influenced by health status. Female experiences of perceived GSO increase as their health decreases. This is consistent with literature on female stigmatization related to health issues. Weisel and Florian (1990) found that females with disabilities were viewed less positively than males with disabilities, representing a double minority status. The low social status associated with being female combined with the stigma attached to being disabled, may result in people having a less positive attitude towards this group (Weisel and Florian 1990). As the severity of a health issue increases, the stigma associated with the issue may move from being discreditable to being discredited (Goffman 1963). In a study of people with HIV, Colbert, Kim, and Sereika (2010) found that women were more stigmatized than men, and suggest that it is essential the health status of women – their physical functioning, mental health, health distress, quality of life, cognitive functioning, vitality, pain, role functioning, social functioning, and general health – be considered as a predictor of stigma. In a study of women with hepatitis C, Grundy and Beeching (2004) found that infected women had anxieties about transmission and inability to fulfill societally expected roles. Lastly, in a study using vignettes, disabled children who were more physically active suffered less stigma from

adults and were perceived as more competent with higher level of warmth (Barg, Armstrong, Hertz, and Latimer 2010).

While the health issues of the participants of this study are unknown, many of the same aspects of the aforementioned studies can be applied generally. The measure representing participant's physical health is derived from four questions related to the participant's physical independence, asking whether their health requires help completing basic tasks like eating, dressing, bathing, prevents them from doing more essential tasks like housework or schoolwork, or just limits certain physical activities like running or participating in strenuous sports. As the severity of the participant's health issue increases, his or her level of physical activity decreases and the health issue is likely to be a more salient aspect of life. Females who indicate more severe health issues are more likely to fall into the discredited category and designated as double minority, facing greater stigmatization and outcasting. The nature of the health issue may also influence the level of outcasting experienced as health issues that are transmittable are more likely to result in ensuing GSO.

Overall, the results of this study suggest that the experience of adolescent GSO transcends many socio-demographic characteristics and can have an impact on nearly any child. Given the heavily structured lives of adolescents around their parents, siblings, school, and consequently their peers, interpersonal ostracism, exclusion, and rejection experienced by adolescents in one social domain are easily proliferated into other social domains, creating an encompassing experience of overall outcasting, referred to here as Global Social Outcasting.

CHAPTER IV

EMPIRICAL APPLICATION OF GLOBAL SOCIAL OUTCASTING TO EXAMINING STRESS-STRAIN PROCESSES

The experience of ostracism threatens one's self-esteem and perception of control over his or her social environment (Williams 1997). Individual instances of rejection from parents, siblings, general family, peers, and teachers are the strains that manifest into the experience of stress in the form of outcasting. When adolescents experience stress or strain, they are more susceptible to progressing through the paths illustrated in the stress-strain paradigm, that is, experiencing negative emotions and consequent delinquency, substance use/abuse, or depression, among other outcomes. This chapter takes the empirical evaluation of Global Social Outcasting (GSO) conducted in Chapter 3 and applies it to the stress and strain processes discussed in the stress-strain paradigm (see Chapter 2). The second-order latent variable of GSO, the initial strain and resulting stress, is analyzed for males and females separately to determine its influence on general, violent, and nonviolent delinquency through pathways of anger and anxiety.

Gendered Global Social Outcasting

At 8 years old, male and female children do not differ in their display of direct verbal aggression, but males were significantly higher than females in physical aggression and females significantly higher in withdrawal (goes away when angry) (Björkqvist, Lagerspetz, and Kaukiainen 1990). Lagerspetz, Björkqvist, and Peltonen

(1988) suggest that by the age of 11 or 12, the social life of female children becomes more "ruthless and aggressive" than was previously indicated by studies prior to their 1988 study. Female children at this age tend to have social structures that are small, but close, whereas male children more commonly had larger and looser groups of friends (Lagerspetz, Björkqvist, Peltonen 1988). This small but close social network for females, with female friendships often characterized as being in pairs, is likely increase the emotional importance of the relationship and opportunity for the use of indirect, or social, aggression (Lagerspetz et al. 1988). Interestingly, male children were less likely to be able to hierarchically structure friends (66.9%) compared to female children (95.3%) (Lagerspetz et al. 1988). By the age of 15, the gender differences in aggression types seem to be stable. Males scored higher than females on physical aggression while females scored higher on indirect aggression and withdrawal (Björkqvist et al. 1990). Once again, no gender differences exist for direct verbal aggression (Björkqvist et al. 1990). This means that somewhere between the ages of 8 and 11 female children fully develop strategies for indirect aggression.

Summarizing Tremblay and colleagues (1996) and Tremblay (1999), Foster and Hagan (2003) note that at every age from 4 to 11 years old, males score higher on physical aggression than females and that physical aggression stabilizes or decreases as the males age. Indirect aggression is reported to be higher in females than males at each age and increases with age for both genders (Foster and Hagan 2003). Dempsey, Fireman, and Wang (2006) found there to be no gender differences in third, fourth, or fifth grade adolescents not victimized in any form – overtly, relationally, or both.

Significantly more male children suffer from being overtly victimized by their peers – hits, pushes others, yells, calls others mean names, and starts fights (Crick and Grotpeter 1995) - while significantly more female children suffer relational peer victimization, or victimization aimed at hurting peer relationships (Crick and Grotpeter 1995; Dempsey et al. 2006). Further, a cross-cultural study of Finnish, Israeli, Italian, and Polish youth, aged eight, eleven, and fifteen, found that at each age males are most likely to use and be victimized by physical and verbal methods of aggression and least likely to use or be victimized by indirect methods of aggression while females were most likely to use indirect methods of aggression (Osterman, Björkqvist, Lagerspetz, Kaukianinen, Landau, Froaczel, and Vittorio 1998 in Foster and Hagan 2003). As previous literature has shown, ostracism, rejection, and interpersonal exclusion occurs during every stage of childhood and adolescence, making it particularly important to study the mechanisms through which these traumas culminate in negative outcomes, which is the focus of the current study.

Females, when compared to males, perceive a greater threat of social disapproval or embarrassment, feelings of guilt or shame, and legal sanctions in response to delinquent behavior (Finley and Grasmick 1985). Shame (or guilt) is a self-imposed sanction from the violation of internalized norms, whereas embarrassment is a socially imposed sanction incurred from violating norms (Grasmick and Bursik 1990 in Blackwell 2000). Embarrassment, sometimes conceptualized as stigma or loss of respect, is imposed by those who have accepted and validated the violated norms and whose opinions are valued (Grasmick and Bursik 1990 in Blackwell 2000).

According to power-control theory, gender differences in delinquency are structured by the type of family – egalitarian or patriarchal (Hagan, Gillis, and Simpson 1990). However, when considering shame and embarrassment along with threats of legal sanctioning, Blackwell (2000) finds that females, compared to males, in more patriarchal families perceive a greater threat of legal sanctions, or being caught by the police for certain crimes, but that no gender differences exist in perceived threat of embarrassment. In less patriarchal (more egalitarian) families, no gender differences were found in threat of legal sanctions, and females, compared to males, perceived less threat of embarrassment (Blackwell 2000). Lastly, Blackwell (2000) identified no gender differences in threats of shame, regardless of household type. These findings indicate that embarrassment, or social sanctions imposed by others such as outcasting, are largely unaffected by gender or family type, with the exception that females in less patriarchal families may perceive less threat of other-imposed sanctions.

Male adolescents are more likely than female adolescents to receive physical punishment from parents in responses to rule violation, meaning that males are more likely to endure harsher punishments than females, even when prior rule violating behavior was held constant (Hay 2003). However, Hay (2003) finds there to be no gender differences in the experience of parental rejection, which is consistent with the finding by Whitbeck and colleagues (1992) that males and females experienced similar levels of parental rejection from parents of both genders.

Global Social Outcasting and Processual Elements in the Stress-Strain Paradigm

Outcasting, or ostracism, rejection, or interpersonal exclusion, is so common in daily social life that the experience of outcasting does not always lead to aggression (Williams 2001). It has been suggested that aggression subsequent outcasting is the result of impulsivity and that those who perceive control over their social environment are less likely to react aggressively (Twenge 2005). When evaluating anger-inducing situations, Mabel (1994) found that out of the ten factors that participants indicated as anger-inducing, four involved perceptions of rejection including being ignored, poor treatment or degradation from others, and lack of caring from others. Additionally, out of 737 outcasting experiences, 43% were associated with inducing anger in the participant, including receiving the silent treatment (Williams 2001).

Compositional elements of outcasting, such as "parental indifference, neglect, [and] rejection… are among the best predictors of behavioral problems in children" (Leary et al. 2006:121) indicating a strong relationship between the adolescent experience of parental outcasting and contemporaneous outcomes like delinquent behavior and aggression. Foster and Hagan (2003) also note a number of studies that suggest an association between child behavioral problems and parental harshness, punitiveness, neglect, inconsistent parenting, lack of warmth, and lack of supervision. In a cross-cultural comparative study of 101 societies, Rohner (1975) states that this is not exclusive to the United States as "compared with accepted children, rejected children throughout the world are significantly more hostile, aggressive, or passive aggressive" finding a strong correlation between parental acceptance, a reverse element of

outcasting, and childhood hostility (p. 100). These children also display elevated levels of self-derogation or self-depreciation (Rohner 1975).

Male and female children, who are categorized by their peers as rejected (liked least) in third grade or fifth grade have a very stable status trajectory of remaining rejected over at least the next five years, while the status trajectory of neutral and popular children was less stable, indicating these children move more fluidly between statuses (Coie and Dodge 1983). This finding is particularly interesting because this five-year range of status trajectories includes the time when students transition from elementary school to middle school, thereby altering their social networks. Coie and Dodge (1983) note that the tendency for rejected children to be aggressive and disruptive make clinical intervention difficult. That same tendency may be the reason rejected children have difficulty moving toward a more positive social status.

Both the chronic and recent experience of peer rejection in children has been found to predict peer-rated and teacher-rated aggressive behavioral problems as well as poor academic performance through increased absenteeism (DeRosier, Kupersmidt, and Patterson 1994). DeRosier and colleagues (1994) found that the stability between early and later maladjusted outcomes was stronger when combined with experiencing outcasting. While externalized behavioral problems resulting from outcasting were found for both male and female children, self-reported and teacher-reported internalizing difficulties (using internalizing, anxious, withdrawal, and social problems scales) were found only for male children chronically outcast, but not for temporary male outcasts or female outcasts, regardless of chronicity (Burks, Dodge, and Price 1995).

There is evidence that suggests aggressive children are more outcast than nonaggressive children (Little and Garber 1995). Aggressive children, and other children with behavioral problems, are more likely to be affected by ostracism and rejection. Kupersmidt and Coie (1990) found that fifth grade students displaying aggression and experiencing rejection had an increased chance of developing later antisocial tendencies such as truancy, police involvement, and aggressive behavior. Additional research has shown support for a cumulative risk model of peer outcasting as a consistent and powerful predictor of aggression and delinquency with the risk of delinquent and aggressive behavior increasing over time with increased outcasting (Kupersmidt, Burchinal, and Patterson 1995). It is important to note that it has been suggested that both rejection and aggression may stem from some underlying factor such as genetic predispositions, lack of social skills, or psychological difficulties (Burks et al. 1995). Research has shown both aggressive adolescents are outcast more frequently (Little and Garber 1995) and that increased outcasting is associated with increases aggression and delinquency (Kupersmidt et al. 1995). Because outcasting has a greater effect on adolescents with behavioral problems, including aggression (DeRosier et al. 1994), the current study adapts the focal direction of ostracism as an antecedent of anger and aggression.

Empirical Assessment of Global Social Outcasting in the Stress-Strain Process

These findings, paired with Agnew's (1992, 2001) designation of negative affective states central to GST, indicate that it is reasonable to evaluate both anger and anxiety as the emotional conduit through which GSO indirectly influences adolescent

violent and nonviolent delinquency. While Agnew (1992, 2001, 2006) repeatedly suggests depression is a key negative emotion, consistent with mental health scholarship and the manifestations of stress proposed by Pearlin (1981, 1989, 1999), depressive symptoms are categorized as an outcome and beyond the focus of the current research. The first element of the structural model evaluated in the current study (see Figure 4.1) is the initial stressor, conceptualized as GSO. GSO emanates from the strains of experiencing outcasting through negative relations with parents, siblings, family, peers, and teachers that include ostracism, rejection, or interpersonal exclusion during early adolescence. The second component of the structural model upon which I base the following hypotheses is the association of strains with negative emotions. In this study, the stressful experience of GSO experienced by adolescents influences the experience of anger and anxiety in a positive direction, meaning, anger and anxiety increase as the level of GSO increases. The last element of the structural model I put forth in Figure 4.1 is the engagement of adolescents in violent and nonviolent delinquency as the outcome to stress and strain processes. Both males and females have been found to respond to rejection and strain with aggression and anger (Mirowsky and Ross 1995; Broidy 2001; Hale, Van Der Valk, Engels and Meeus 2005) and according to Agnew (2006), adolescents who experience anxiety are more likely to engage in substance use/abuse as a method of escape rather than in delinquent behavior. What are the contemporaneous effects of GSO on early adolescent delinquency through a pathway of negative affective states? In evaluating this question, I propose the following hypotheses:

H_1: During early adolescence, increases in Global Social Outcasting are positively associated with negative emotions.

H_{1a}: The early adolescent experience of GSO increases anger.

H_{1b}: The early adolescent experience of GSO increases anxiety.

H_{1c}: Global Social Outcasting is associated with negative emotions at similar strengths for both males and females.

H_2: Increases in Global Social Outcasting are indirectly associated with increases in delinquent behavior through negative emotions.

H_{2a}: There is a positive indirect association between the experience of Global Social Outcasting and delinquent behavior through anger for both males and females.

H_{2b}: The indirect influence of Global Social Outcasting on delinquency through anxiety is nonsignificant, regardless of gender.

H_{2c}: The strength of the indirect influence of Global Social Outcasting on delinquency through anger is stronger in males, compared to females.

H_3: The primary mechanism by which Global Social Outcasting operates to influence delinquency of any type is through anger. Meaning, a within-gender comparison of the direct and indirect influences Global Social Outcasting on delinquency will reveal that the strongest path of influence is indirectly through anger and not indirectly through anxiety nor through a direct influence.

It is important to note that while the questions used to create most of the latent constructs in this study are measured at the time of the survey, those related to participant and peer delinquency measure instances over the year prior to the survey. Shown in Figure 4.1 is the full measurement and structural model proposed in this study. See Chapter 3 for a detailed description of the data used for analysis in this chapter.

Methods

Variables

Delinquency. General delinquency is measured at Wave I using a 13-item index that combines a 5-item index of violent delinquency and an 8-item index measuring non-violent delinquency. The index of violent delinquency encompasses activities such as fighting, carrying weapons, and robbery and nonviolent delinquency consists of items referring to various forms and degrees of theft and burglary, selling drugs, and property damage. The measure of delinquency is similar to other deviance scales using this data (Kaplan and Lin 2005; Pals and Kaplan 2013B) yet differs through the addition of items found in other delinquency scales (Kaplan 1976; Hagan and Foster 2003) and the exclusion of other items either considered not delinquent that were used in other measures. The 13 items used in measuring delinquency are dichotomous responses to questions such as "[using] force to get money or valuables from another person?" or "[taking] things worth $50 or more that didn't belong to you?" (see Appendix C for the full list of observed items) regarding whether the participant has engaged in any of the 13 delinquent behaviors in the past year (Kaplan 1976; Kaplan and Lin 2005; Pals and Kaplan 2013B).

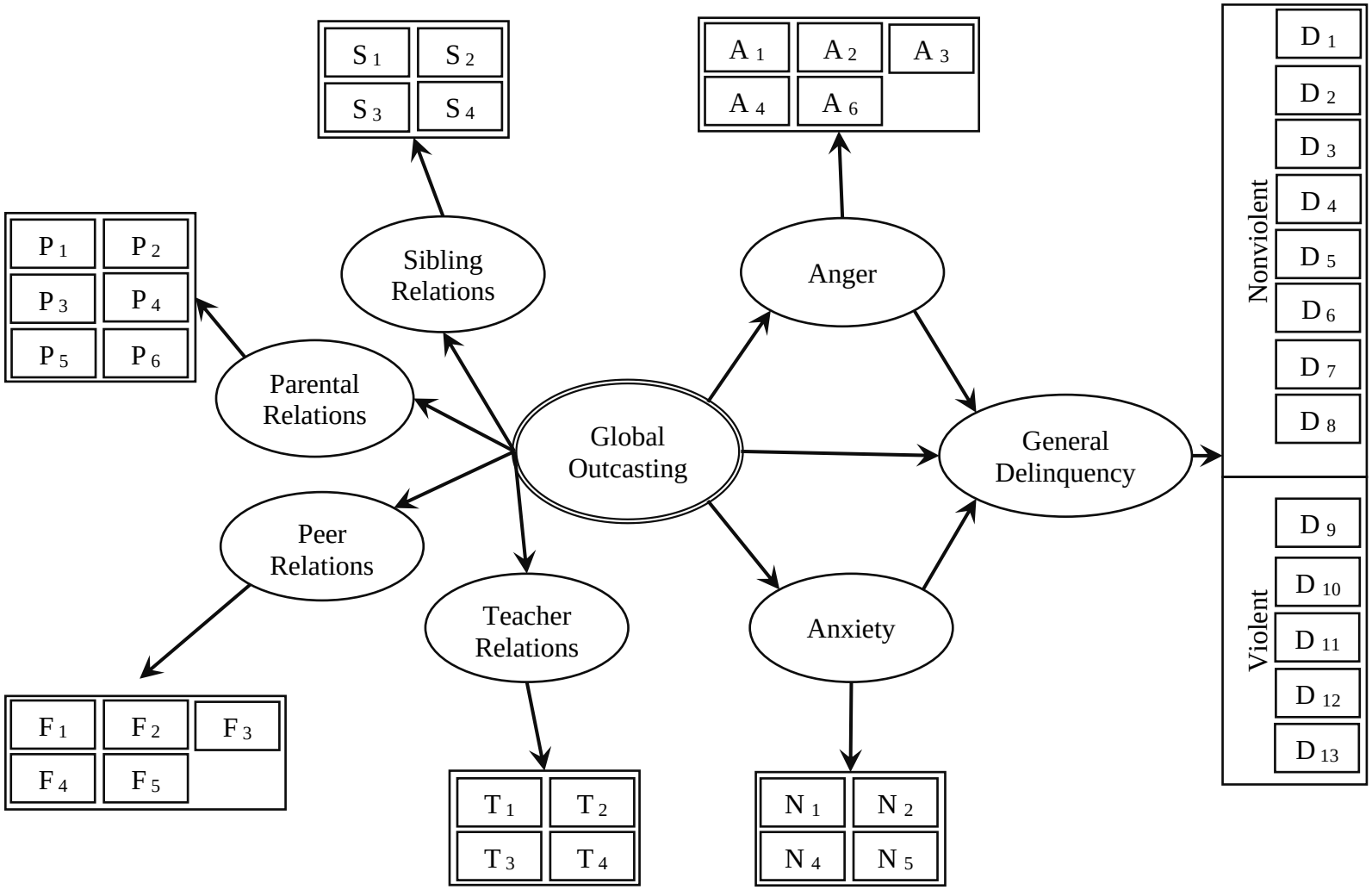

Figure 4.1: Full Proposed Structural Equation Model including Measurement Models of all Independent Latent Variables and Proposed Structural Relationships. (correlated error terms and control variables omitted)

The marker indicator in the male and female measurement model for violent delinquency is D_{11}, having "Taken part in gang fights" in the past 12 months, and for nonviolent delinquency D_8 having "took things worth $50 or more that didn't belong to you?" in the past 12 months. In combining violent and nonviolent delinquency to form a measurement of general delinquency, D_4, having sold drugs in the past 12 months, is the marker indicator for females and for males, D_7, having "used force to get money or valuables from another person?" in the past 12 months is the marker indicator. Violent delinquency and nonviolent delinquency fit the data well individually and when combined into a measure of general delinquency (see Table 4.1), all with sufficient factor loadings (see Figure 4.2 for male factor loadings and 4.3 for female factor loadings for the general delinquency model). The equal form model, testing the equality of the number of factors and pattern of indicator-factor loadings across groups, indicates the data fits the model well producing RMSEA = 0.014 (90% CI = 0.006–0.021, CFit = 1.000), CFI = 0.997, TLI = 0.994, SRMR = 0.040 for nonviolent delinquency and RMSEA = 0.000 (90% CI = 0.000–0.021, CFit = 1.000), CFI = 1.000, TLI = 1.000, SRMR = 0.043 for violent delinquency. Testing for measurement invariance across groups indicates that holding factor loadings and intercepts to equality does not degrade the model and that observed indicators evidence comparable relationships to the latent construct across groups, meaning the measures have the same meaning and structure for both males and females ($\chi 2(6) = 7.600$, $p = 0.269$ for nonviolent delinquency and $\chi 2(3) = 1.925$, $p = 0.588$ for violent delinquency). When evaluating the combined model of general delinquency, the equal form model indicates a good-fitting model (RMSEA =

Table 4.1: Fit Indices for Each First-Order Congeneric Measurement Model

	N	RMSEA	CFI	TLI	SRMR
Males					
General Delinquency	2,922	0.020	0.990	0.987	0.048
Violent Delinquency	2,922	0.000	1.000	1.002	0.018
Nonviolent Delinquency	2,922	0.024	0.993	0.988	0.045
Anger	2,894	0.020	0.999	0.996	0.023
Anxiety	2,887	0.000	1.000	1.003	0.008
Females					
General Delinquency	2,839	0.009	0.994	0.993	0.076
Violent Delinquency	2,839	0.006	0.999	0.997	0.058
Nonviolent Delinquency	2,839	0.000	1.000	1.005	0.036
Anger	2,832	0.038	0.994	0.988	0.033
Anxiety	2,825	0.016	0.999	0.996	0.013

Source: KLAMS Generation II, Time I

0.014 (90% CI = 0.010–0.018, CFit = 1.000), CFI = 0.992, TLI = 0.990, SRMR = 0.063), but the ME/I analysis indicates marginal difference across groups ($\chi 2(11) = 22.210$, $p = 0.023$) with modification indices suggesting an issue with the D_{12} indicator (used force to get money or valuables from another person?). Analysis of partial invariance confirms that other than the non-invariant indicator D_{12}, the remaining indicators are invariant across groups ($\chi 2(10) = 10.967$, $p = 0.360$).

Negative Affective States. The concept of anger is measured at Wave I through a proxy of six questions asking the respondent how he or she would react if insulted and whether he or she "often gets angry, annoyed, or upset" (see Appendix D for full list of items). The first-order CFA of these 6 items indicate a negative relationship of A_5 ("If someone insulted me, I would probably feel very angry but not do anything about it") with all other items measuring anger precluding the use of this item in the measurement.

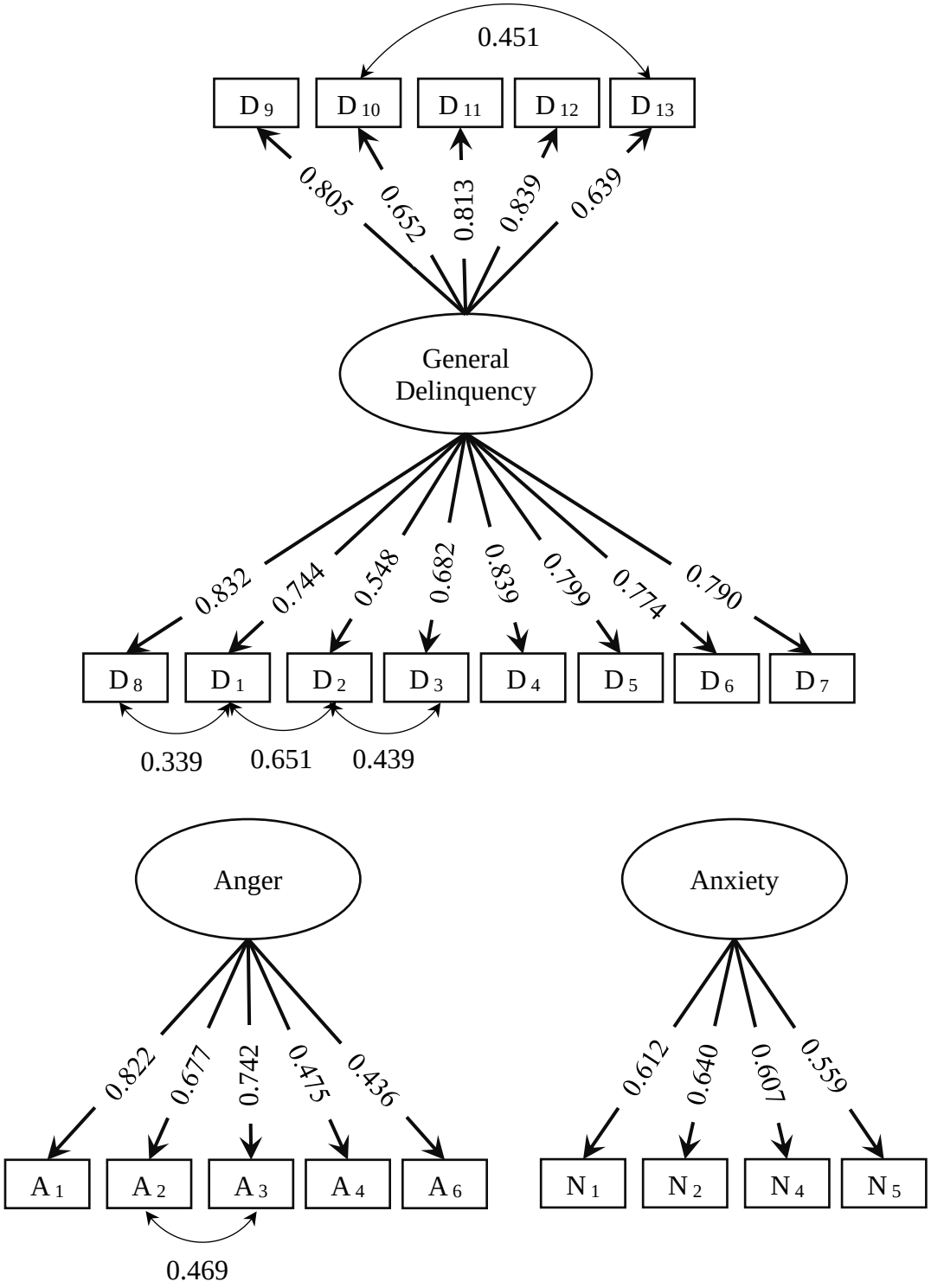

Figure 4.2: Male First-Order CFA Standardized Factor Loadings

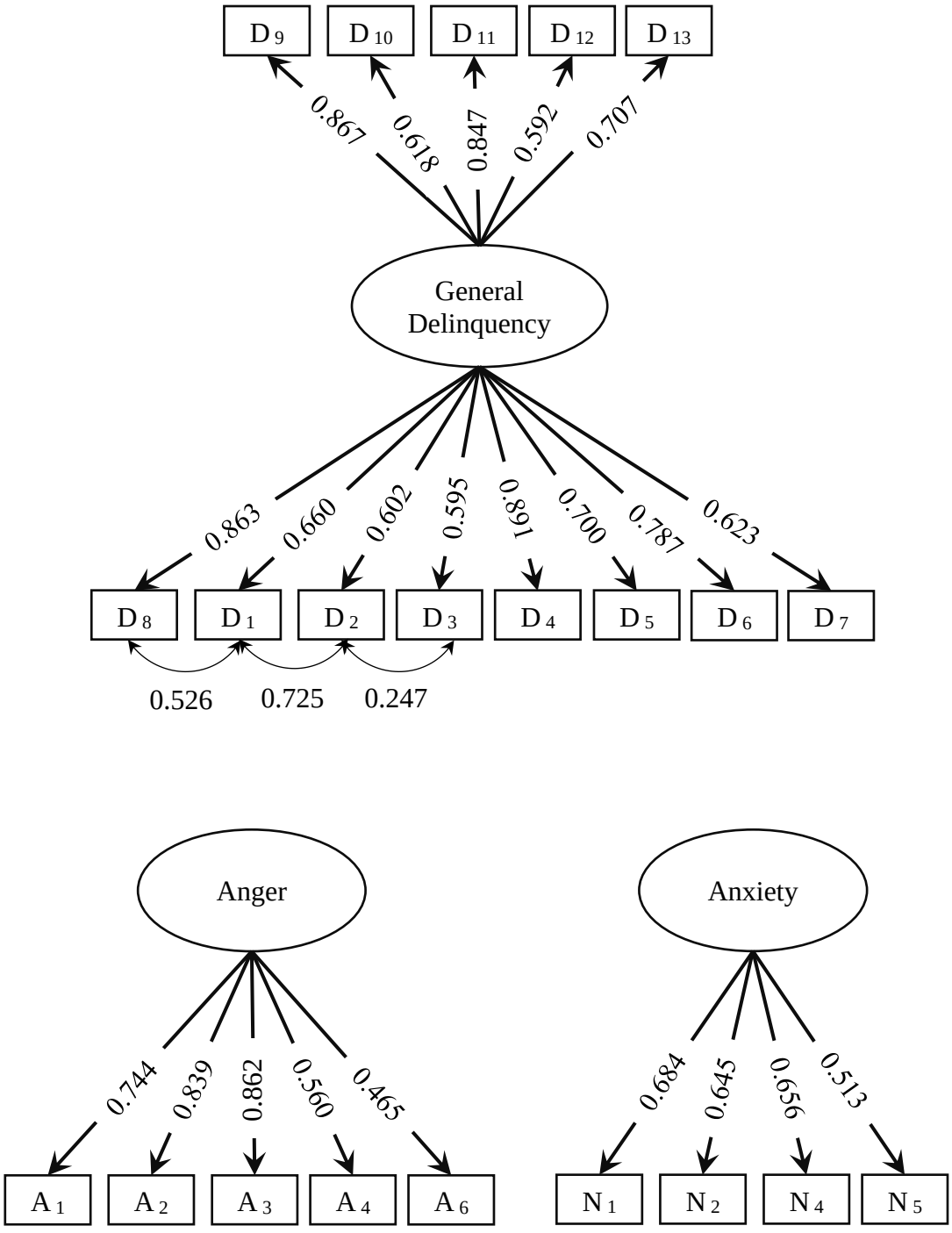

Figure 4.3: Female First-Order CFA Standardized Factor Loadings

The modification indices produced by the CFA of the remaining five items indicates the model would benefit from allowing correlated error terms between A_2 ("If someone insulted me, I would probably insult him/her back") and A_3 ("If someone insulted me, I would probably think about ways I could get even"), which appears to be a conceptually valid correlation.

After allowing these error terms to correlate, the measure of anger fits the data well (see Table 4.1) with sufficient factor loadings (see Figure 4.2 for male factor loadings and Figure 4.3 for female factor loadings). The configural model (equal form model) indicates the model fits the data well for both males and females (RMSEA = 0.031 (90% CI = 0.020–0.043, CFit = 0.997), CFI = 0.996, TLI = 0.992, SRMR = 0.028). However, evaluation of ME/I indicates differences between males and females ($\chi 2(3) = 43.844$, $p = 0.000$). Analysis of partial invariance indicates that other than the A_4 and A_6 indicators, the remaining items in the model are invariant across groups ($\chi 2(1) = 0.089$, $p = 0.765$).

Anxiety is measured using items reflecting the physiological features often associated with the experience of anxiety. The 5-item index is composed of dichotomous items measuring the physiological symptoms of anxiety similar to the anxiety measure used by Kaplan and Lin (2000). Questions include, among others, "Do you often bite your fingernails?" "Are you often troubled by your hands sweating so that they feel damp and clammy?" and "Are you often bothered by nervousness?" (see Appendix D for full list of observed items). The item N_3 ("Do you often bite your fingernails?") of the 5-item index indicates a very poor loading with all other items

involved in measuring anxiety ($\beta = 0.292$ for females and $\beta = 0.342$ for males). The poor factor loading for N_3 in males and females indicates the measure of anxiety will benefit from excluding the item from the analysis.

Once N_3 has been removed from the measurement of anxiety, a CFA indicates the 4-item index fits the data well (see Table 4.1) with sufficient factor loadings (see Figure 4.2 for male factor loadings and Figure 4.3 for female factor loadings). Evaluation of the equal form model indicates the model fits the data well across groups (RMSEA = 0.008 (90% CI = 0.000–0.030, CFit = 1.000), CFI = 1.000, TLI = 0.999, SRMR = 0.011) but analysis of the ME/I indicates marginal gender differences ($\chi2(2) = 6.538$, $p = 0.038$). After allowing the non-invariant indicator N_5 to be freely estimated, the remaining indicators appear to be invariant across groups ($\chi2(1) = 0.224$, $p = 0.636$).

Analysis

Measurement models were constructed using Mplus 8.3 to perform confirmatory factor analysis (CFA) prior to the specification of the structural equation model. As is the procedure for structural equation modeling, the measurement models will be estimated in tandem with the proposed structural relationships, but the structure of the gendered measurement models (which error terms are correlated etc.) established in Chapter 3 will remain fixed. The CFA conducted separately for each latent variable in preparation for the SEM, relies exclusively on dichotomous indicators. Employing the WLSMV estimator is advantageous when using binary indicators in a CFA for a number of previously discussed reasons (See Chapter 3 for more details). The use of dichotomous indicators in the construction of all latent variables necessitates the

continued use of the WLSMV estimator for analysis of the structural relationships put forth in Figure 4.1. Not shown in Figure 4.1 are the social and structural correlates that are used as control variables in the current analysis and consist of age, race/ethnicity, socioeconomic status (through a proxy of parental education), health, perceived neighborhood problems, impulsivity, and association with delinquent peers. Marker indicators are adjusted in each model to ensure proper measurement of latent constructs and multiple group comparisons of associations. Structural relationships are examined through the use of gendered models. All gender specific models are overidentified, meaning they all degrees of freedom that are positive with the lowest being $df = 1{,}877$.

Following the analysis of structural relationships, multiple group SEM analyses are conducted using configural models to test differences in gender in the indirect influences of GSO on the varying forms of delinquency through negative emotions. The use of configural models is the least restrictive multiple group analysis, but still requires certain constraints be placed on the models. Similar to the multiple group analysis with CFA that was conducted in Chapter 3, the current model constraints specify that factor loadings and thresholds (intercepts) be freely estimated across genders, scale factors are fixed to 1 in both groups, and factor means are fixed to 0 in both groups. The gender difference of the indirect influence of GSO on delinquency are then tested through pathways of anger and anxiety separately using the Wald Test of Parameter Constraints in which a significant result indicates a gender difference. Once again, the multiple group models are well overidentified with degrees of freedom positive for each group and collectively.

Regarding the direction of influence, the current study takes the perspective that outcasting influences anger and anxiety, but does not assert causality. This direction of influence is supported by the findings of Kupersmidt and colleagues (1995) that peer relation problems are predictors of aggression and delinquency. Alternatively, it is possible that adolescents who tend to be angry or anxious may be more likely to experience outcasting as they may be perceived by their peers as difficult with which to be friends. This direction of influence is also supported in previous research in that aggression predicts peer rejection in adolescents (Little and Garber 1995). Because the findings by DeRosier and colleagues (1994) suggest that peer rejection, or outcasting, has a greater effect on adolescents with behavioral problems, including aggression, the current study proposes the focal direction that GSO influences anger and anxiety. To be clear, the data used in the current study are cross-sectional, impeding any assertions that GSO *causes* anger or anxiety, rather the current research seeks to evaluate the directional association of GSO with these negative emotions.

Gendered Structural Model

Table 4.2 reflects analysis of the direct influence of GSO on all forms of delinquent behavior, net of all control variables, but without accounting for negative emotions. All models fit the data well nearly producing a preferred fit. Results indicate that general delinquency is significantly and positively influenced by the experience of GSO in adolescence, regardless of gender and net all control variables. GSO does not have a significant direct influence on violent delinquency for neither males nor females, net all control variables. Nonviolent delinquency is significantly influenced by GSO for

Table 4.2: Standardized Direct Influence of GSO on Delinquency, net Control Variables

	Males N=2,923	Females N=2,839
General Delinquency	0.093*	0.140*
Nonviolent Delinquency	0.106*	0.136
Violent Delinquency	0.067	0.135

Source: KLAMS Generation II, Time I

males while results for females were marginally nonsignificant ($p = 0.067$). The direct association between GSO and delinquency of any type does not significantly differ between males and females.

When using binary indicators in the latent variable response framework, thresholds are modelled rather than means and intercepts (Muthén and Muthén 1998-2017) because the underlying latent construct is related to the observed categorical indicators through the use of threshold parameters (Brown 2015). Additionally, when using delta parameterization, as is the case with the current analysis, the variance of the underlying latent construct is fixed to 1.0 for all items. Lastly, recall that in a multiple group analysis, scale factors are fixed in one group and free to vary in the other group because the variances of the latent variables are not presumed to be equal across groups (Brown 2015).

As such, prior to conducting structural equation models to evaluate the association of GSO with negative emotions, the statistical software Stata 15 was used to construct measurements of anger and anxiety. The purpose of creating these measures outside of a latent modeling framework is to provide a straightforward and easy to

understand preliminary evaluation between genders in the difference in means and variances for each negative emotion. The first method used to create these measures employs the mean of sums for participants who responded to at least 50% of the items, resulting in a female sample of N=2,832 for anger and N=2,825 for anxiety and a male sample of N=2,894 for anger and N=2,886. The second method employed to create a measure of anxiety and anger utilizes predicted values from a principle factor analysis of a tetrachoric correlation matrix. The predicted PCF measures resulted in a male sample of N=2,821 for anger and N=2,861 for anxiety and a female sample of N=2,762 for anger and N=2,808 for anxiety. Both indexes utilize the same variables that are present in the confirmatory factor analysis.

The descriptive statistics for negative emotions are presented in Table 4.3. Results of t-tests evaluating the difference in means between genders reveals that, regardless of the method used in creating the measure, the mean of anger is significantly greater in males compared to females ($t(5581) = -11.674$, $p < 0.000$ and $t(5724) = -10.913$, $p < 0.000$, for the predicted PCF and sum of means, respectively), while the reverse is true of anxiety also at significant levels ($t(5667) = 2.979$, $p < 0.002$ and $t(5709) = 2.640$, $p = 0.004$, for the predicted PCF and sum of means, respectively). Further, a Variance-comparison test was conducted to evaluate the gender differences in the variance of negative emotions for both versions of the measures. The results of this analysis indicate that both version of the anger measure have a greater variance for males than females (predicted PCF test $F(2,761, 2,820) = 0.906$, $p = 0.004$ and the sum of means test $F(2,831, 2,893) = 0.923$, $p < 0.016$). Both results remain significant even

Table 4.3: Descriptive Statistics of Negative Emotions

	Males		Females	
	Mean	Standard Deviation	Mean	Standard Deviation
Anger (Sum of Means)	0.369	0.287	0.287	0.275
Anger (Predicted PCF)	0.493	0.388	0.375	0.370
Anxiety (Sum of Means)	0.239	0.272	0.258	0.282
Anxiety (Predicted PCF)	0.326	0.371	0.356	0.387

Source: KLAMS Generation II, Time I

when conducting tests adjusting for nonnormality. For both versions of the anxiety measure, the variance is significantly greater for females compared to males (predicted PCF test $F(2{,}807, 2{,}860) = 1.088$, $p = 0.012$ and the sum of means test $F(2{,}824, 2{,}885) = 1.076$, $p = 0.025$).

Additionally, correlations between the measures of negative emotions were examined. The results show that when anger and anxiety are measured using predictive values obtained from a factor analysis, the emotions are significantly correlated for both males ($r = 0.285$; $p < 0.001$) and females ($r = 0.297$; $p < 0.001$). Similar results were produced using the measures created with the sum of means for both males ($r = 0.317$; $p < 0.001$) and females ($r = 0.320$; $p < 0.001$). Given that both of these measures are significantly correlated, using Mplus version 8.3, the correlation of the latent constructs, with no other variables included, was evaluated. The results are similar to those found using alternative measures in Stata. The latent constructs of anger and anxiety continue to be correlated for females ($r = 0.536$; $p < 0.001$) and males ($r = 0.530$; $p < 0.001$). The results of the analysis regarding correlations indicate that the measures of anger and

anxiety are confounding, requiring their errors terms be allowed to correlate throughout the remaining analysis.

In the structural equation models evaluating the association of GSO with anger and anxiety, prior to including delinquency in the model and with error terms correlated between anger and anxiety, results show that, regardless of gender, GSO significantly influences both anger ($\beta = 0.425$, $p < 0.001$ for males and $\beta = 0.464$, $p < 0.001$ for females) and anxiety ($\beta = 0.561$, $p < 0.001$ for males and $\beta = 0.459$, $p < 0.001$ for females). Anxiety and anger continue to be strongly correlated for males ($r = 0.555$; $p < 0.001$) and females ($r = 0.616$; $p < 0.001$) and the strength of the influence GSO has on anger is not statistically different from the strength of influence it has on anxiety, regardless of gender. In the multiple group analysis comparing the strength of the association of GSO to negative emotions, results suggest that GSO is directly associated with anger at statistically similar strengths for males compared to females ($\chi2(1) = 0.412$, $p = 0.521$). Similarly, males and females did not significantly differ in the strength of association between GSO and anxiety ($\chi2(1) = 0.006$, $p = 0.936$).

The model illustrating the proposed influence of GSO on general delinquency through anger and anxiety, shown in Figure 4.4, fit the data sufficiently well for both males and females. The association between the experience of GSO and experiencing the negative emotions of anger and anxiety for both males and females remains significant and positive when including the outcome variable of general delinquency. The experience of adolescent anger indicates a significantly positive influence on general delinquency, whereas the experience of anxiety was significantly associated with

general delinquency in a negative direction, regardless of gender. The indirect influence of GSO on general delinquency for males was significant through the experience of anger (GSO → Anger → General Delinquency), net of control variables, accounting for an indirect standardized influence of $\beta = 0.138$, $p < 0.001$ (method for calculating standardized indirect influence: GSO → Anger = 0.418 and Anger → General Delinquency = 0.330, therefore, 0.418 X 0.330 = 0.138). For females, GSO was also found to have a significant influence on anger, and anger a significant influence on general delinquency, both in the positive direction, resulting in a significant standardized indirect influence of GSO through anger on general delinquency ($\beta = 0.217$, $p < 0.001$).

GSO also has a statistically significant positive association with experiencing anxiety, but the experience of anxiety appears to have the opposite influence on general delinquency, regardless of gender and net of control variables. For both males and females, the standardized indirect influence of GSO on general delinquency through anxiety (GSO → Anxiety → General Delinquency) is statistically significant in a negative direction (standardized $\beta = -0.112$, $p < 0.001$ for males and $\beta = -0.085$, $p < 0.05$ for females). Meaning, that when adolescents experiencing GSO also experience anxiety, anxiety significantly influences decreases in delinquent behavior for both males and females.

Given the opposite direction of the effects of GSO on general delinquency indirectly through anger and anxiety, it is unsurprising that results from the Wald Test of Parameter Constraints indicate a significant difference between the two indirect effects (GSO → Anger → General Delinquency ≠ GSO → Anxiety → General Delinquency)

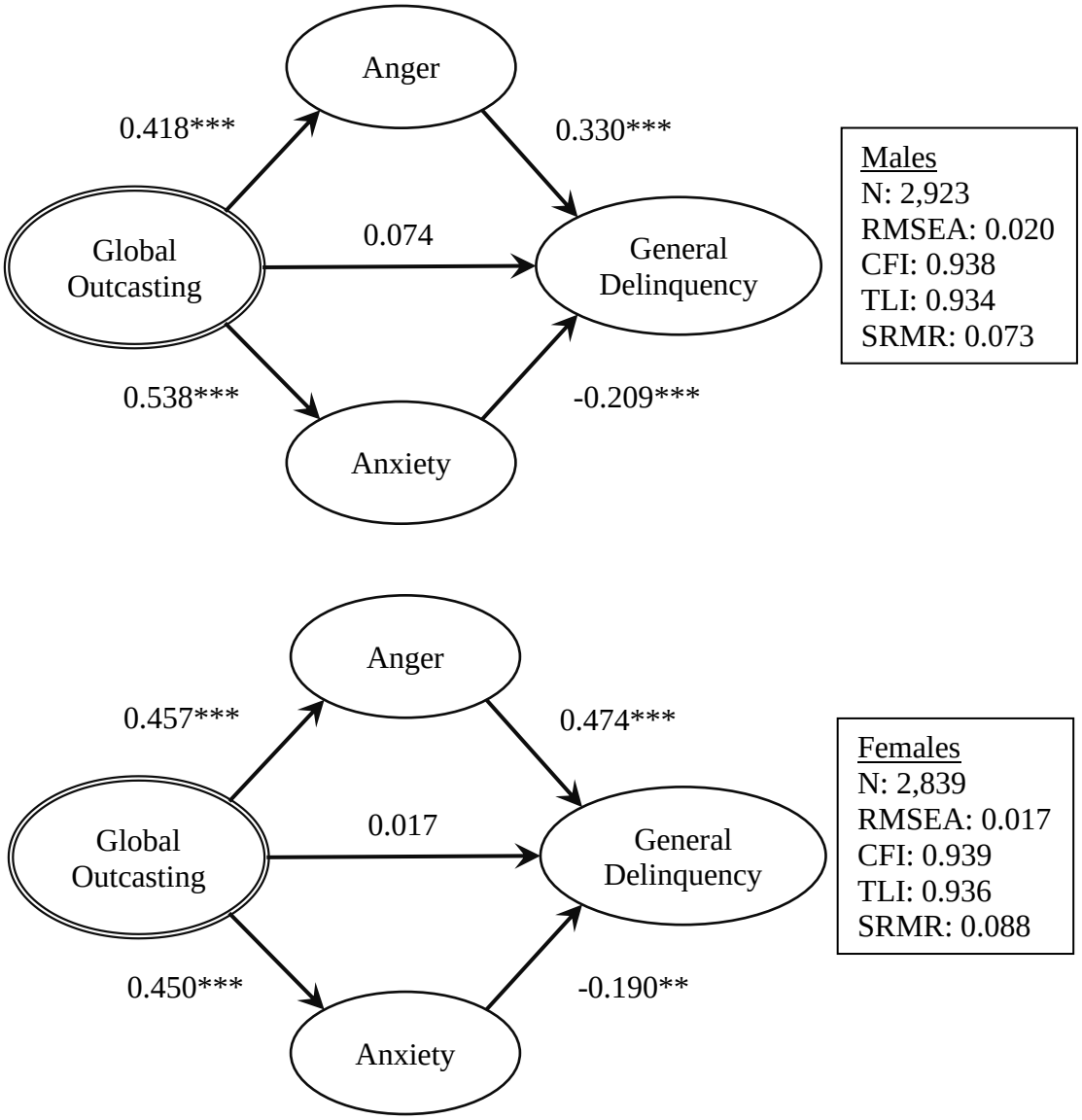

Figure 4.4: Structural Modeling of the standardized influence of GSO on General Delinquency through Anger and Anxiety for Males (top) and Females (bottom). (Measurement models and control variables omitted from figure – see Appendix E)

for males ($\chi 2(1) = 17.200$, $p < 0.001$) and females ($\chi 2(1) = 23.151$, $p < 0.001$).

When testing the significant difference between absolute values of each indirect influence (values equal to the originals, but both in a positive direction), the difference between the paths through anger and anxiety becomes nonsignificant for males ($\chi 2(1) = 0.445$, $p = 0.505$), but there remains a significant difference for females ($\chi 2(1) = 5.752$, $p < 0.05$). This indicates that the indirect influence of GSO on general delinquency is similarly strong through anger and anxiety for males, but in opposite directions. However, for females, these results indicate that even if the effects of GSO on general delinquency were in the same direction through both anger and anxiety, the indirect effects of GSO on general delinquency are stronger through anger than anxiety.

The test of gender differences in the strength of the indirect association of GSO on general delinquency produced a Wald Test of Parameter Constraints that indicated no statistical difference between males and females in the strength of the indirect influence through anger (standardized $\beta = 0.138$ in males; $\beta = 0.217$ in females) $\chi 2(1) = 2.266$, $p = 0.132$ or anxiety (standardized $\beta = -0.112$ in males vs. $\beta = -0.085$ in females) $\chi 2(1) = 0.166$, $p = 0.684$. This means that the strength of the indirect effects of GSO → Anger → General Delinquency did not significantly differ between genders, nor did the strength of the indirect effects of GSO → Anxiety → General Delinquency. Evaluating the total effects for males and females of GSO on general delinquency, which includes the direct influence of GSO on general delinquency along with the indirect effects through both anger and anxiety (GSO → General Delinquency + GSO → Anxiety → General Delinquency + GSO → Anxiety → General Delinquency), also produced results

that indicate nonsignificant differences ($\chi 2(1) = 0.408$, $p = 0.523$) in the strength of total effects between genders. It is important to note that in calculating the total effects, the positive indirect influence of GSO on general delinquency through anger is combined with the negative indirect effects through anxiety, creating a counteracting influence. For this reason, I have taken the absolute values of the direct and indirect effects for each model, that is all effects in the positive direction) to compare the strength of the absolute total effects of GSO on general delinquency between males and females. Results indicate that with all effects being positive, there exists no difference between males and females in the absolute strength of effects of GSO on general delinquency ($\chi 2(1) = 0.014$, $p = 0.907$).

Evaluation of the model reflecting the influence of GSO on nonviolent delinquency through the negative emotions of anger and anxiety indicates the model fits the data sufficiently well (see Figure 4.5). Results shown in Figure 4.5 indicate the association of GSO with both anger and anxiety, net of control variables and regardless of gender remain significantly positive when evaluating the outcome of negative delinquency.

Anger is significantly and positively associated with nonviolent delinquency for both males and females. Similar to its association with general delinquency, anxiety has a significant and negative influence on nonviolent delinquency for males, net of control variables, but this relationship is marginally nonsignificant ($p = 0.054$) for females. Once negative emotions are accounted for, GSO does not have a significant direct association with nonviolent delinquency for neither males nor females. The strength of

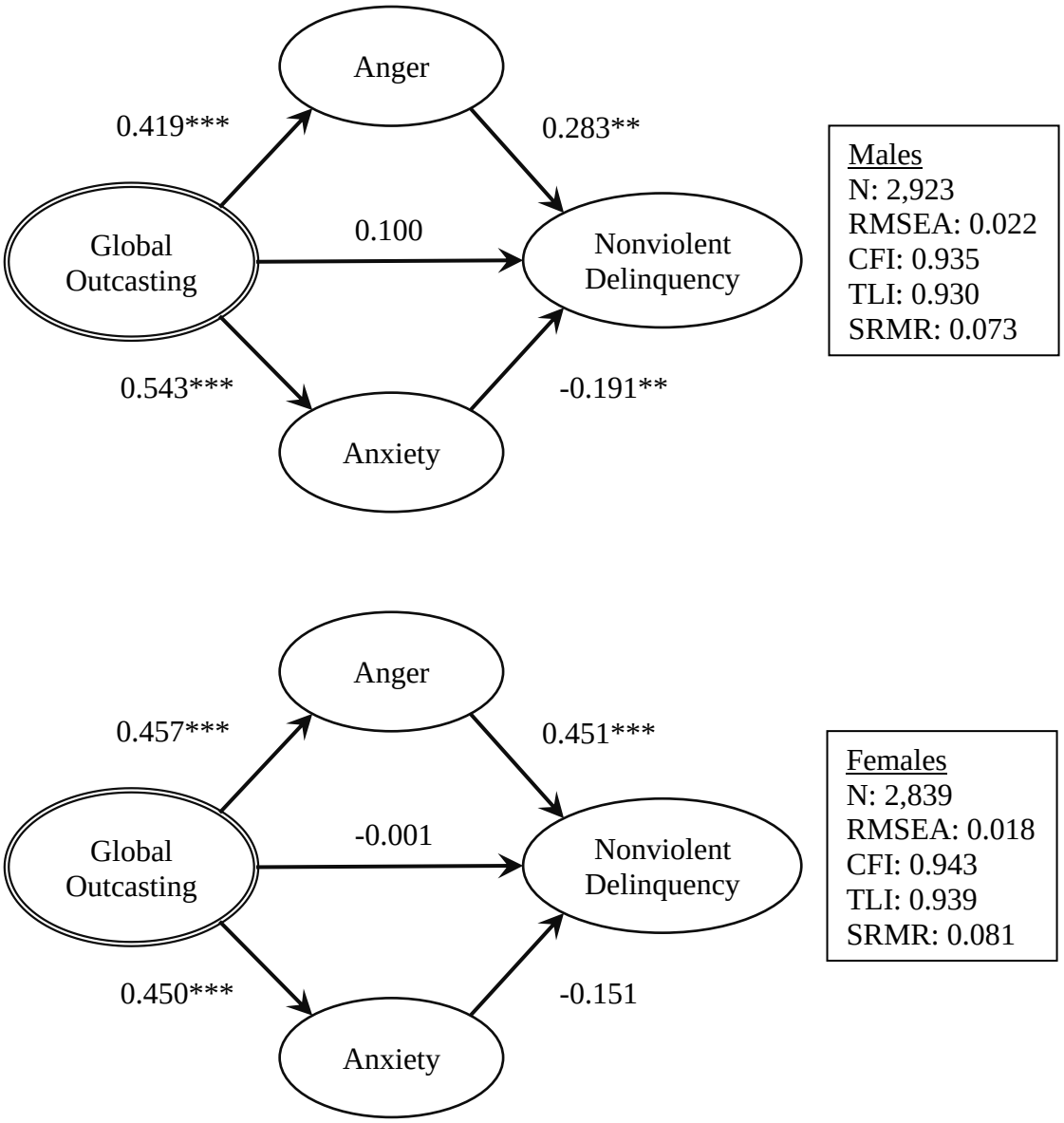

Figure 4.5: Structural Modeling of the standardized influence of GSO on Nonviolent Delinquency through Anger and Anxiety for Males (top) and Females (bottom). (Measurement models and control variables omitted from figure – see Appendix F)

the standardized indirect influence of GSO on nonviolent delinquency is significant through the mechanism of anger for males ($\beta = 0.119$, $p < 0.001$) and females ($\beta = 0.206$, $p < 0.001$). In the opposite direction, GSO has a significant and negative influence on nonviolent delinquency through anxiety for males ($\beta = -0.104$, $p < 0.01$) but this association is marginally nonsignificant for females ($\beta = -0.068$, $p = 0.058$). For both genders, the strength of the indirect influence of GSO on nonviolent delinquency differs significantly between the pathway of anger compared to anxiety. Given the opposite directions of these indirect influences, this is an expected outcome. When testing the absolute values of these indirect effects, the results become nonsignificant for males, but the absolute strength of GSO on nonviolent delinquency remains significantly stronger through anger compared to anxiety for females ($\chi2(1) = 5.238$, $p < 0.05$). This means that when the absolute indirect effects (all effects positive) are compared, the influence of GSO on nonviolent delinquency operates equally through anger and anxiety for males, though in opposite directions, while the indirect effects of GSO on nonviolent delinquency are significant and stronger through anger for females (nonsignificant through anxiety).

When testing the configural models for nonviolent delinquency, the indirect influence of GSO on nonviolent delinquency through anger (GSO → Anger → Nonviolent Delinquency) is similarly strong for males ($\beta = 0.119$, $p < 0.001$) compared to females ($\beta = 0.206$, $p < 0.000$) producing results indicating no gendered difference ($\chi2(1) = 2.247$, $p = 0.134$) in the strength of indirect effects. Similarly, the results produced from testing the difference between males and females in the strength of the

indirect effects through anxiety ($\chi 2(1) = 0.331$, $p = 0.565$) were nonsignificant. However, despite no gender difference being present in the strength of indirect effects, discussed earlier, these indirect effects of GSO on nonviolent delinquency are only significant for males and not females (though they are only marginally nonsignificant for females). Consistent with the strength of indirect effects being statistically similar across genders, the strength of the total effects of GSO on nonviolent delinquency directly and indirectly through anger and anxiety were also not significantly different between genders ($\chi 2(1) = 0.093$, $p = 0.760$). Testing the gender differences in the strength of absolute total effects (all direct and indirect effects positive) also indicates no gender difference ($\chi 2(1) = 0.034$, $p = 0.855$).

The structural model evaluating the influence of GSO on violent delinquency indicate a positive and significant influence of GSO on anger and anxiety for both males and females, net of control variables (see Figure 4.6). Similar to the analyses conducted on both general delinquency and nonviolent delinquency in the current study, anger is positively associated with violent delinquency and anxiety is negatively associated with violent delinquency, both statistically significant for males and females. The strength of the standardized indirect influences of GSO on violent delinquency through anger (males: $\beta = 0.167$, $p < 0.000$; females: $\beta = 0.186$, $p < 0.000$) and anxiety (males: $\beta = -0.131$, $p < 0.01$; females: $\beta = -0.097$, $p < 0.05$) is significant regardless of gender. Once again, the opposite direction of the indirect effects produces a significant difference between strength of effects through anger and anxiety, regardless of gender, meaning GSO → Anger → Violent Delinquency ≠ GSO → Anxiety → Violent Delinquency.

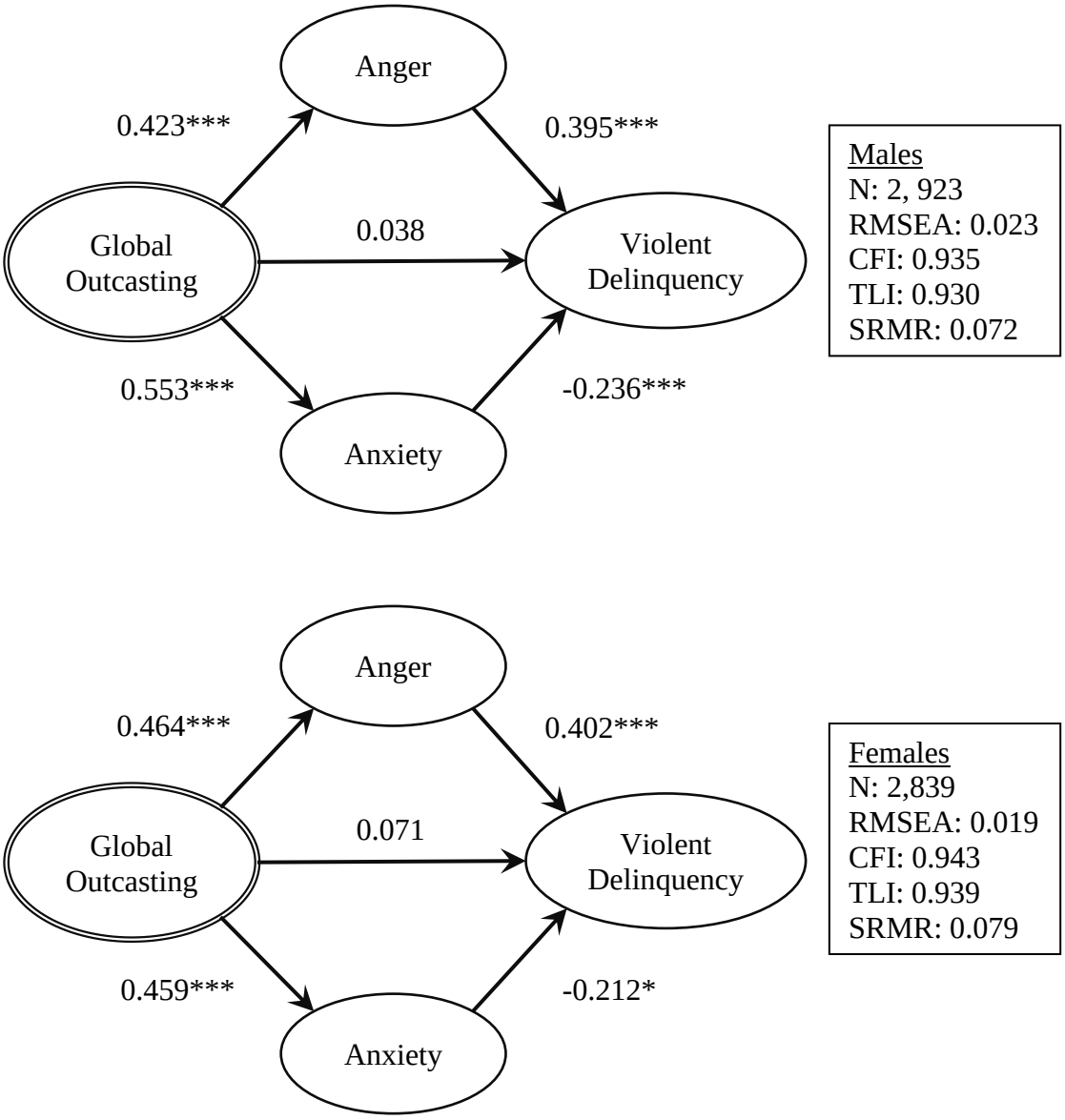

Figure 4.6: Structural Modeling of the standardized influence of GSO on Violent Delinquency through Anger and Anxiety for Males (top) and Females (bottom). (Measurement models and control variables omitted from figure – see Appendix G)

Evaluating the absolute values of indirect effects, this difference becomes nonsignificant for both males ($\chi 2(1) = 0.580$, $p = 0.446$) and females ($\chi 2(1) = 2.153$, $p = 0.142$), meaning, the influence GSO has on violent delinquency is not significantly different in its strength through anger compared to anxiety, regardless of gender.

Results from the multiple group analysis evaluating gender differences in the strength of indirect influence of GSO on violent delinquency indicate no difference in gender through either anger ($\chi 2(1) = 0.212$, $p = 0.645$) or anxiety ($\chi 2(1) = 0.172$, $p = 0.678$). The evaluation of gender differences in the strength of total effects of GSO on violent delinquency produce similarly unremarkable results ($\chi 2(1) = 0.720$, $p = 0.396$), even when evaluating the gender difference in absolute (direct and all indirect effects positive) total effects ($\chi 2(1) = 0.055$, $p = 0.815$).

Summary and discussion

Models assessing the influence of GSO on negative emotions revealed a statistically significant positive influence of GSO on both anger and anxiety, regardless of gender and net of control variables. Additionally, the Wald Test of Parament Constraints analyzing the association of GSO with anger and anxiety, conducted separately for each gender and prior to the inclusion of delinquency of any type, indicated that the strength of association between GSO and anger was statistically similar to the strength of association between GSO and anxiety, regardless of gender. The results of these analyses suggest gender neutral support for H_{1a} and H_{1b}, that early adolescent experience of GSO increases anger and anxiety, respectively. The third hypothesis (H_{1c}) "Global Social Outcasting is associated with negative emotions at

similar strengths for both males and females" was also supported. Neither the strength of association of GSO on anger nor anxiety differed significantly between males and females supporting H_{1c} and confirmed through a multiple group analysis using the Wald Test of Parament Constraints.

Support for H_{1a} and H_{1b} is not surprising because, as discussed in Chapter 2 and advocated for through the stress-strain paradigm, adolescents who experience strain or stress are likely to experience subsequent negative emotions. The strength of influence GSO has on anger was statistically similar to the strength of its influence on anxiety for both males and females. Preliminary t-tests and variance-comparison tests showed that the mean and variance of anxiety was significantly higher for females compared to males while the opposite was true for anger. The results showing that GSO significantly and positively influenced anger and anxiety similarly within- and between-gender indicate that, despite the difference in means and variance, the effects from experiencing GSO in adolescence is not constrained to a single gender or negative emotion. The strong correlation between the latent constructs of anger and anxiety, which resulted in allowing their error terms to correlate throughout all analyses, also suggest that when evaluating the effects of strain or stress on emotional outcomes, varying emotions should be analyzed as concomitant rather than occurring independent of each other. Analyzing emotions as concomitant is supported by the findings of De Coster and Zito (2010) that the effects of depressive symptoms on delinquency is exacerbated by the accompanying experience of anger for males.

The friend group composition of adolescent males differs from adolescent females in that an adolescent male's social network is typically characterized as larger and looser, whereas a social network for a female adolescent is more commonly described as closer, often being in paired friendships (Lagerspetz, Björkqvist, Peltonen 1988). Therefore, when outcasting happens to adolescent males, they may experience more widespread outcasting from a looser network, whereas females may experience outcasting from fewer people, but these people are more affectively valued.

In testing hypothesis H_{2a} "There is a positive indirect association between the experience of Global Social Outcasting and delinquent behavior through anger for both males and females," GSO was found to have a statistically significant positive indirect influence on general, nonviolent, and violent delinquency through anger for both males and females, net of control variables. This indicates gender neutral support for H_{2a} for all types of deviance as outcomes. The next hypothesis, H_{2b} states "The indirect influence of Global Social Outcasting on delinquency through anxiety is nonsignificant, regardless of gender." This hypothesis is unsupported for males in the analysis of all forms of delinquency and for females in the analysis of general and violent delinquency. In the analysis of the influence of GSO on nonviolent delinquency, females indicated no direct and marginally nonsignificant indirect effects through anxiety. In fact, the indirect influence of GSO on delinquency through anxiety has a significant negative effect in nearly all models, regardless of gender.

Discussed in Chapter 2, the negative affective state of anxiety, sometimes associated with fear, is more closely associated with escape-related responses to

stress/strain, such as substance use/abuse (Agnew 2006). Anxiety resulting from strain or stress is associated with low potency and high activity, meaning they feel powerless to prevent or alleviate the stress or strain and a strong impulse to flee or hide, either physically or psychologically. As such, the response of those who experience anxiety related to strain is more likely related to engaging in substance use/abuse (Agnew 2006). As such, it was hypothesized that "The indirect influence of Global Social Outcasting on delinquency through anxiety is nonsignificant, regardless of gender." However, the results of this analysis indicate a statistically significant negative influence of anxiety on delinquent behavior, demonstrating that rather than not having any effect, experiencing strain-related anxiety resulted in significantly reduced delinquency, largely regardless of gender and net of control variables. Female anxiety had a marginally nonsignificant influence on nonviolent delinquency. Because anxiety had a statistically significant negative influence on delinquency, support was not found for hypothesis H_{2b}.

Multiple group analysis was conducted to test the equivalence of strength between genders of the indirect influence of GSO on delinquency through anger. Results suggest GSO influences delinquency indirectly through anger at similar strengths for males and females. This is not to say that males and females experience emotions or GSO the same, but only that the strength of indirect effects through anger are statistically similar and significant. As such, the hypothesis (H_{2c}) that proposes "The strength of the indirect influence of Global Social Outcasting on delinquency through anger is stronger in males, compared to females," is unsupported because the results suggest a statistically similar strength of indirect effects for males and females.

The last hypothesis proposes that for each gender separately, GSO has a stronger influence on delinquency indirectly through anger compared to anxiety or direct effects. In the full structural models, no direct effects of GSO on delinquency of any type are significant, and are consequently unexamined in comparison to the indirect effects that are broadly found to be significant. Since the indirect influence through anger is in the opposite direction of anxiety, it is not surprising that the difference in strength between the effects is statistically significant in every model, regardless of gender. But do these emotions facilitate the same strength of influence, just in opposite directions? By eliminating the counteracting effects of a positive and negative indirect effect by using absolute values, being mindful that the actual effects are still in the opposite direction, the level of difference can be evaluated. The results of this analysis indicate that for males, the influence of GSO on delinquency of any type is facilitated through anger or anxiety at statistically similar strengths, but in opposite directions. In two of the female models, the exception being the violent delinquency model, the absolute values of indirect effects of GSO on delinquency were significantly stronger through anger compared to anxiety. These finding suggest support for H_3 for females, that GSO has a stronger indirect influence through anger than anxiety, but there is not a significant difference for males. The strength of the influence of GSO on delinquency through anger was not significantly different than through anxiety for males, but these effects are only positive through anger for both genders, meaning anger is the only path analyzed for either gender for which GSO indirectly influences increases in delinquent behavior.

CHAPTER V

SUMMARY, DISCUSSION AND FUTURE RESEARCH

Stress, like outcasting, is not uncommon. It is experienced in everyday life and no one person is immune to this experience (Pearlin 1999, Wesselmann, Ren, and Williams 2017). The experience of stress can have a detrimental impact on an individual's physical and mental health along with his or her behavior (Pearlin et al. 1981; Agnew 1992). According to the stress process paradigm, an individual who experiences instances of strain, such as ostracism, rejection, or interpersonal exclusion, is likely to experience associated stress (Pearlin et al. 1981). Similar to the way in which an individual who experiences the strain of losing his or her employment may soon begin to feel economic stress, a person who endures an instance of rejection or ostracism may soon begin to feel the stress of becoming a social outcast in relation to a particular group.

Outcasting is conceptualized here as incorporating experiences of ostracism, rejections, and interpersonal exclusion and defined as the "implicit or explicit action of designating an individual or group to the category of outsider or outgroup member, in relation to any ingroup through physical, verbal, or nonverbal expressions of exclusion that seek to prohibit an individual from any interpersonal interaction, group, relationship, or network" (Chapter 3). Empirical testing of four separate groups – teachers, parents, peers, and siblings – indicated support that adolescents may experience perceived

outcasting from each of these groups when answering affirmatively to individual indicators of ostracism, rejection, and interpersonal exclusion (see Chapter 3).

Stress proliferation occurs when the stress an individual is experiencing in one social domain bleeds into other social domains, often through secondary stressors (Pearlin 1999; Pearlin et al. 2005). This is an especially important aspect for younger adolescents whose social network is particularly interlocking. The parents of an adolescent typically interact with his or her teachers and peers; the peers of an adolescent will often interact with his or her siblings; the peers of an adolescent, often from the same school, may interact with his or her teachers. It is these social conditions that promote social outcasting in one social environment to proliferate into other social domains. When perceived outcasting bleeds from one social domain into other social domains, this results in the perception of multiple sources of outcasting.

The individual's perception of being a social outcast may proliferate throughout his or her social universe, penetrating various spheres of social activity. Global Social Outcasting (GSO) then, is "the extent of one's social universe in which his or her perceived outcasting is evident, or the degree to which outcasting is perceived to extend from throughout the individual's social universe" (Chapter 3). For example, if an individual experiences outcasting from only 1/5 of his or her social domains, the level of GSO experienced is likely to be low, whereas if he or she experiences outcasting from 4/5 of his or her social spheres, levels of GSO are likely to be high. Individuals who experience higher levels of GSO may self-identify and be identified by others as social outcasts – they are attributed a label of difference or outcast (Becker 1963). This is

empirically evident in the construction of the second-order latent variable of Global Social Outcasting (GSO) discussed in Chapter 3. The perceived outcasting experienced from the four separate groups discussed earlier (parents, peers, teachers, and siblings) showed statistically significant correlation (correlations of $p < 0.001$ for all first-order latent constructs) indicating possible proliferation of outcasting from one social sphere to another. This warranted the construction of a second-order variable of GSO, which fit the data well and was invariant between genders. By this cogitation, if the event or experience of strain produces stress, then according to the stress process paradigm, the experience of ostracism, rejection, or interpersonal exclusion, reflected through observed indicators, can be conceptualized as strain while the resulting latent variable of perceived social domain-specific outcasting and perceived GSO is the experience of stress resulting from those strains.

Society is organized in such a way that the status of an individual influences his or her susceptibility to systems of stratification that distribute life chances unequally within a hierarchical social structure, thereby creating social inequalities (Pearlin 1989, 1999). Individuals who occupy a lower position within society are afforded fewer resources making them more susceptible to the experience of stress (Pearlin 1989). Several social correlates were examined to determine their influence on the experience of GSO including associating with delinquent peers, perceived neighborhood problems, age, race, socioeconomic status (using parental education as a proxy), impulsivity, and health.

Almost all bivariate analyses indicated a statistically significant influence from each of the social correlates on GSO regardless of gender, the exception is that male's race appeared to have no significant influence on GSO (see Figure 3.4). In separate bivariate analyses (evaluating a single X → Y relationship), age, impulsivity, associating with delinquent peers, and perceived neighborhood problems (adolescent perceptions of neighborhood deterioration) all independently positively influenced the experience of GSO for both male and female adolescents. As age, impulsivity, associating with delinquent peers, or perceived neighborhood problems independently increase, the adolescent experience of GSO also increases. The first multivariate model included only demographic variables of age, race, and socioeconomic status. Results suggested that for both males and females, age was positively and significantly associated with experiencing GSO while socioeconomic status was negatively and significantly associated with GSO. For males, race did not have any significant correlation with GSO, but for females, being black, compared to white, was found to be positively and significantly associated with the experience of GSO. With the inclusion of impulsivity, perceived neighborhood problems, and health included in the model, only socioeconomic status for females remained significant from the demographic model. It is important to note that in the female model, it appears that females identifying as "Other" race, compared to White, are significantly associated with greater experience of GSO. However, in the current study, this sample of females is represented by less than 30 individuals, limiting any interpretation of results for that demographic. Associating with delinquent peers, impulsivity, and perceived neighborhood problems were

significantly and positively associated with the level of GSO experienced, controlling for all other social correlates and regardless of gender. For both males and females, socioeconomic status and health had a negative and significant bivariate influence on the level of GSO, but in the multivariate analysis of social correlates, health and socioeconomic status remained significant only for females, but not for males.

Similar to the way in which ADHD sufferers experience difficulties creating and maintaining relationships largely attributed to his or her behavioral excesses (Landau et al. 1998), the impulsive adolescent may also be seen as an unattractive companion. This relationship was present in bivariate analyses and persisted, net all other control variables and regardless of gender. The relationship between delinquent peer association and GSO may result from delinquent individuals being unappealing companions to those who conform to societally expected behavior. Therefore, those who socialize with delinquent peers are seen as unappealing companions by association (Sutherland 1947). Alternatively, individuals who are outcast by others often seek the companionship of other outcasts (Becker 1963). Henceforth, it is possible that individuals who experience higher levels of GSO are more likely to socialize with others that also likely have higher levels of GSO.

Increased socioeconomic status in females, measured through parental education, was associated with lower levels of adolescent GSO being experienced, but not for males. As socioeconomic status is often indicative of social standing, or class, within a given group, it is reasonable that higher socioeconomic status female adolescents are perceived more favorably by teachers, parents, and peers, thereby reducing experiences

of GSO. Additionally, adolescent members of higher socioeconomic families often have more access to resources to address any behavioral issues that may influence her outcasting (for example, medication to treat ADHD). Alternatively, lower levels of education are often associated with less income, sometimes resulting in more time working and less time spent at home with adolescents. Less time together can have an influence on the adolescent's perception of reciprocated relational value. In other words, the adolescent may perceive that the parent does not value the relationship to the extent desired by the adolescent and be perceived as parental outcasting. Females from lower socioeconomic families may not experience the same parental involvement in her education, resulting in poorer academic performance and consequent negative relations with teachers and school administrators. Lastly, parental absenteeism in their child's education, possibly associated with increased time working, may be stigmatized by educators. Much in the same way the offspring of convicted criminals endure a trickled-down stigma (Goffman 1963), children of uninvolved parents may experience a stigma from educators.

The level of GSO experienced in males is unaffected by health, but for females, as health decreases the level of GSO experienced increases. This is consistent with findings that female high school students with disabilities were perceived less favorably than their male counterparts with disabilities (Weisel and Florian 1990). In the hierarchical social structure concerning gender, males, compared to females, often hold a higher status position. As such, a female who is also stigmatized as suffering health issues, particularly a disability, may then hold a double minority status (Weisel and

Florian 1990). Colbert and colleagues (2010) suggest that the health status of women – their physical functioning, mental health, health distress, quality of life, cognitive functioning, vitality, pain, role functioning, social functioning, and general health – is an essential consideration when predicting female stigmatization. Females experiencing health issues are more stigmatized than males (Colbert, Kim, Sereika, and Erlen 2010) and have anxieties about transmitting disease to others and fulfilling societal expectations (Grundy and Beeching 2004). Stigmatization from exogenous sources paired with endogenous insecurities is undoubtably associated with increases perceptions of GSO in females. Lastly, Barg and colleagues (2010) indicate that more active disabled children were less stigmatized by adults than less active disabled children. This is consistent with the direction of association and measurement of participant's health. As the measurement of health declines, participants indicate decreased ability to be independently physically active. This loss of independence and reliance on the help of others increases the salience of the health issue in the life of the participant. The more salient a health is, the more likely the issue is one that is discredited rather than just discreditable (Goffman 1963).

Bivariate analysis of the influence of race/ethnicity on GSO indicated significant positive effects for Black, Hispanic, and "Other" race females, when compared to White females. Hispanic females did not differ from Black females in their levels of GSO. Meaning, Black, Hispanic, and "Other" race females, when compared to White females, reported experiencing higher levels of GSO. The influence of race on the level of GSO experienced for females becomes nonsignificant when controlling for all other social

correlates, except for those identifying as "Other" race. A low sample size of individuals identifying as "Other" race limit the interpretation of results pertaining to the sample of this demographic. Neither the bivariate analysis, multivariate demographic analysis, nor the analysis with included social correlates of delinquent friends, impulsivity, health, and perceived neighborhood problems produced any racial differences for males in the level of GSO they experience.

Early premonitions of the stress process linked the experience of stress directly to depression, or other mental health issues (Pearlin et al. 1981). General Strain Theory (GST) added the experience of negative emotions to the process linking the experience of strain to ensuing anger, anxiety (or fear), or depression which then, for some individuals, resulted in delinquent or criminal behavior to address these strains or negative emotions (Agnew 1992, 2001). Given the penchant within the stress process paradigm to use depressive symptoms as an outcome variable, the current study did not consider depressive symptoms as a negative emotion, but limited these negative emotions to the experience of anger or anxiety.

Females, compared to males, are more likely to express and experience indirect aggression and males, compared to females, are more likely to express and experience physical aggression, but there are no gender differences in verbal aggression (Björkqvist, Lagerspetz, and Kaukiainen 1990; Crick and Grotpeter 1995; Foster and Hagan 2003; Dempsey, Fireman, and Wang 2006). Males and females have both been found to respond with aggression and anger to the experience of rejection (Mirowsky and Ross 1995; Broidy 2001; Hale, Van Der Valk, Engels and Meeus 2005). The social network

of adolescent females is smaller, typically characterized as paired relationships, whereas males reported larger and looser social networks (Lagerspetz, Björkqvist, Peltonen 1988). As GSO can be a form of verbal or indirect aggression, and for the reasons previously listed, it was hypothesized that males and females would equally experience negative emotions.

Using methods of measurement alternative to latent variable modelling (for a discussion of this, see Chapter 4), between-gender t-test evaluating the difference in means and variance comparison tests evaluating the differences in variances of anger and anxiety were conducted. The results indicated that males had a significantly higher mean and variance for anger where females had a significantly higher mean and variance for anxiety. The emotion of anger was also found to be significantly correlated with anxiety for both males and females. After constructing anger and anxiety using CFA into models that fit the data well with sufficient factor loadings that were at least partially invariant between genders, the correlation between these constructs remained significantly strong resulting in allowing their error terms to correlate for all remaining analyses. Structural equation analyses found that anger and anxiety were both significantly and positively influenced by the adolescent experience of GSO, net of all control variables and regardless of gender. A Wald Test of Parameter Constraints indicated that strength of GSO's influence on anger did not significantly differ from the strength of its influence on anxiety. Additionally, neither the effect of GSO on anger nor the effect of GSO on anxiety differed significantly in their strength between males and

females. This relationship remained significant through models that evaluated the indirect influences of GSO on general, violent, and nonviolent delinquency.

The current analysis takes the focal direction examining the influence of GSO on anger and anxiety. Alternatively, it is possible that anger, or aggression, influences GSO either prior to the time of measurement or simultaneously through a reciprocal relationship (or feedback loop). Both directions are supported in prior research that uses longitudinal data, that peer rejection influences aggression (DeRosier et al. 1994; Kupersmidt et al. 1995) and that aggression influences rejection (Little and Garber 1995). The research presented in this paper uses cross-sectional data preventing the control for prior negative emotions. To this point, the current research does not assert that GSO *causes* anger or anxiety. Rather, there is a positive association between GSO and negative emotions in that increased levels of experienced GSO in adolescence is associated with increases levels of anger and anxiety, regardless of gender and net of control variables.

When strains or stressors trigger negative affective states, these emotions create pressure for corrective action (Agnew 1992, 2001, 2006). The pressure for corrective action lowers the cost of criminal (or delinquent) coping and may reduce an individual's ability to cope in a legal manner (Agnew 2006). Anger is the emotion that is most likely to result in criminally delinquent behavior because it is associated with a desire for vengeance, motivates the individual to take action, and lowers inhibitions (Agnew 1992) and is high in potency and action (Agnew 2006). This means people who experience anger in response to a strain or stressor feel empowered and justified in taking action to

address the perceived injustice he or she experienced. The current study proposes that the influence of GSO on delinquency is (1) indirectly significant through anger for both males and females, (2) stronger through the indirect effects of anger, compared to anxiety, regardless of gender and (3) through the indirect effect of anger (GSO → Anger → Delinquency), is stronger for males compared to females.

Models evaluating the influence of GSO on all types of delinquency indirectly through anger produced results indicating a consistent significant and positive indirect effect in every model (GSO → Anger → Delinquency) regardless of gender, type of delinquency, and net control variables. This supports the first proposition, which references hypothesis H_{2a}, that the influence of GSO on delinquency is indirectly significant through anger for both males and females. Results from multiple group analyses indicate there is no significant gender difference in the strength of effects GSO has on any types of delinquency indirectly through anger or anxiety, net of control variables. This means the proposition reflecting H_{2c}, that the influence of GSO on delinquency through the indirect effect of anger (GSO → Anger → Delinquency) is stronger for males compared to females, is unsupported.

The influence of GSO on delinquency is facilitated indirectly through anger and anxiety in opposite directions. While GSO and anxiety have a significant positive association, anxiety negatively influences delinquency of all types. This means that only adolescents who experienced increased levels of anger in response to increased levels of GSO, reported significantly increasing engagement in delinquent behavior.

Agnew (2006) positions anxiety as an emotion that is low in potency but high in activity, which means the individuals who experience anxiety resulting from strain feel powerless to stop or prevent the strain and feel a call to action to flee or escape the situation. Those who experience anxiety often engage in withdrawal strategies, such as drug or alcohol use/abuse (psychological escape) as a form of delinquency. For this reason, I proposed that GSO will not have a significant influence delinquency, for which measurement is centered around violence and theft in varying forms, indirectly through anxiety. However, mentioned earlier, empirical analyses indicated that, for both males and females, the influence of GSO on delinquency indirectly through anxiety was in a negative direction and statistically significant. Only the indirect influence of GSO on nonviolent delinquency through anxiety was marginally nonsignificant for females, net of all control variables. The significant results in a negative direction indicate that the experience of anxiety in adolescents as a reaction to GSO does not increase delinquent behavior, but rather buffers against adolescents engaging in the forms of delinquency measured in the current study. As Agnew suggests, this does not mean adolescents abstain from delinquency, but rather employ strategies of withdrawal such as substance use/abuse.

The opposite direction of influence indirectly through anger and anxiety make assessing which path is more substantially influential more convoluted. If there are counteracting effects in the same model, there's a high likelihood that a statistical test of difference will indicate a significant disparity between the two, as is the case in the

current study. This prompts the question of whether these indirect effects are equivalent, but in opposite directions.

Being mindful that the indirect effects of GSO on delinquency are in opposite directions in every model, taking the absolute values of both indirect effects – keeping the original values of the counteracting indirect effects, but making them both positive – allows the equivalence of these effects to be tested. Results indicate that, for males, the level of indirect influence GSO has on any form of delinquency does not significantly differ between anger and anxiety. For example, in evaluating the influence of GSO on violent delinquency for males, the standardized indirect influence through anger $\beta = 0.167$ is not statistically different than the absolute value of indirect influence through anxiety $\beta = | -0.131 |$, or 0.167 is statistically similar to 0.131.

However, for females, the influence of GSO on delinquency is significantly stronger through the indirect effects of anger, compared to anxiety, for all types of delinquency analyzed except violent delinquency. The indirect effects of GSO on violent delinquency did not differ through anger compared to anxiety for females. The concomitant and competing effects of anger and anxiety in these models suggest that when adolescents experience GSO, they are equally as likely to experience anger as they are anxiety.

For males, the experience of anger and anxiety have an equally strong influence on the level of delinquent behavior, but these are in opposite directions. For females, while the experience of anger and anxiety is also in competing directions, the experience of anger has a significantly stronger influence on delinquent behavior, suggesting

support for the third proposition, that the effects of GSO are substantially stronger through anger, compared to anxiety.

Keeping in mind the concomitant nature of anger and anxiety, when anger is associated with the experience of GSO in adolescence, male and females appear just as likely as one another to engage in delinquency. When the experience of GSO is accompanied by anxiety, the experience of this emotion seems to counteract the effect GSO has on delinquency indirectly through anger. However, despite gender neutral strength of indirect effects through anxiety (indirect effects through anxiety did not significantly differ in their strength between males and females), the results of within-gender comparisons of indirect effects suggest that this buffering effect of anxiety is stronger in males compared to females. The only exception to this in the present study was with the examination of violent delinquency as an outcome. Because this type of delinquency is the type for which females are least likely to engage, it is not surprising that effects of anxiety counteracted those of anger at similar strengths.

Future Research

This research has provided valuable insight into the gendered mechanisms through which the experience of ostracism, rejection, and interpersonal exclusion may have a detrimental influence on delinquent behavior during early adolescence. Rejected children experience a stable (sustained) trajectory of rejection in adolescents (Coie and Dodge 1983) and chronic rejection is associated with aggressive behaviors (DeRosier et al. 1994), internalizing behaviors (Burks, Dodge, and Price 1995), and increased stability between early and later maladjusted outcomes (DeRosier et al. 1994). Therefore,

extending this research into longitudinal models to evaluate the lagged effects of GSO on negative emotions and delinquency in later adolescence and early adulthood would demonstrate the long-term effects of GSO and illuminate possible points of intervention.

Mentioned earlier, the focus of exclusion in the present study is on interpersonal exclusion rather than institutional exclusion. A future direction of the current research is to examine the link between interpersonal and institutional exclusion. Similar to the way in which individuals stigmatized by former incarceration may further find themselves disenfranchised from family, political, and occupational institutions Foster and Hagan 2015), adolescents who experience GSO may also find themselves disconnected from important political, educational, and social institutions. The interconnected nature of adolescent social networks limits their legal ability to leave or avoid socially negative situations, thereby damaging social bonds. Additionally, the experience of damaged social bonds in adolescence resulting from experiencing GSO, may negatively affect an individual's institutional bonds in later life leading to institutional exclusion. The data used in the present study facilitate further examination of this phenomena through the addition of measurements related to avoiding civic participation, access to healthcare, school attendance, and occupational participation. It would be advantageous for future research to examine the possible connection between the interpersonal exclusionary experience of GSO and participants exclusion from various institutions.

Furthermore, the use of longitudinal data would help facilitate evaluating directional consideration regarding whether GSO impacts anger or whether aggressive children are more impacted by GSO. Data from Kaplan Longitudinal and

Multigenerational Study can be used to accomplish this by measuring GSO at Time 2, rather than Time 1 as is the current study. This will facilitate testing the influence of negative emotions in the current study (measured at Time 1) on GSO at Time 2, while controlling for prior GSO. This analysis provides a comparison of the influence of GSO on negative emotions and negative emotions on GSO. This will also allow for the control of prior anger and anxiety in evaluating the influence of GSO at Time 2 on negative emotions at Time 2. Additional statistical methods may also be applied to both cross-sectional and longitudinal data to evaluate these direction considerations using feedback loops in structural equation models, previously referred to as simultaneous equation models.

Additionally, demonstrated in the current study and through a review of literature, males and females react emotionally different to the experience of strains and diverge in their engagement with varying outcomes, such as depression, substance use/abuse, and delinquency. As such, integrating several other outcomes, such as depression and substance use/abuse would allow insight in determining the most likely emotional responses and outcomes for males and females to the experience of GSO. It is also advantageous to examine the factors that moderate the effects of GSO on delinquency, depression, and substance abuse. Pearlin (1989; 1999) strongly suggests that stress is experienced different by individuals depending on his or her level of social support and mastery. Evaluating whether the potentially beneficial impact that mastery and social support may have on those who experience GSO, negative emotions, and delinquency is short-term or whether these individuals may experience longer lasting

benefits could have implications for potential interventions. Each of these extensions should be evaluated both contemporaneously and longitudinally.

Further, the current inclusion of neighborhood elements in the analysis is reliant on the respondent's perception of these elements. The focus of the current research is on adolescent experiences and with this population, it may be more relevant to measure adolescent perceptions of neighborhood elements than the actual occurrence of these elements in reality. In a study of male and female adolescents, age 10 to 16, Byrnes, Chen, Miller, and Maguin (2007) found that adolescent perceptions of neighborhood problems, compared to mother's perceptions, was more important in predicting adolescent delinquent behavior. Byrnes et al. (2007) suggest that adolescents may be aware of these neighborhood problems because they have already begun to engage in delinquent behavior that associates them with these groups. An alternative reason may be that youth, compared to adults, are more likely to spend time out of the house and around the neighborhood, thereby increasing their exposure to the neighborhood problems. While adolescent perceptions are important in predicting delinquent behavior, future research would benefit from the inclusion of measures designed to represent actual neighborhood disadvantage and racial composition. This would allow assessment regarding whether perceived neighborhood problems or actual neighborhood problems are a better predictor of one's delinquent behavior.

Lastly, this research would benefit from the establishment of an instrument designed to capture a more comprehensive set of observed indicators that depict a wider array of aspects relating to perceived ostracism, rejection, and interpersonal exclusion.

Applying this instrument to multiple sources of outcasting and capturing this wider array of aspects, a more accurate, inclusive, and generally complete measurement of GSO could be constructed. An inclusive measure of GSO could have far-reaching and widespread implications that includes, but is not limited to, further evaluation of contemporaneous effects at different stages of the life course, lagged effects of early GSO on later outcomes in the life course, and the study of how changes in the level of one's experienced GSO alters emotions, academic achievement, delinquency, substance use/abuse, and a wide assortment of mental health outcomes.

By using a unique conceptualization and measurement of strain and stress, through the use of GSO, this research has expanded understanding of the contemporaneous influence that ostracism, rejection, and interpersonal exclusion have on one's global self. By applying this measure of GSO to the stress-strain paradigm, this research has also advanced our understanding of the sources and mechanisms by which adolescents come to display delinquent behavior. Though this research has contributed to the literature on ostracism, rejection, interpersonal exclusion, delinquency, and the stress-strain paradigm, there is more research that is required to more fully understand the experience of becoming an outcast.

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APPENDIX A

GENDERED DESCRIPTIVE STATISTICS FOR INDICATORS OF GLOBAL SOCIAL OUTCASTING

		Males			Females		
		N**	Mean	S/D	N**	Mean	S/D
Parental Outcasting	*P_1: My parents try to understand my point of view	2,899	0.110	0.313	2,821	0.117	0.322
	*P_2: I feel close to my parents	2,904	0.079	0.268	2,823	0.113	0.318
	*P_3: My parents and I often do things together that we all enjoy	2,899	0.199	0.399	2,825	0.214	0.410
	P_4: My parents are usually not interested in what I say or do	2,908	0.069	0.253	2,830	0.061	0.241
	P_5: As long as I can remember, my parents have put me down	2,899	0.038	0.192	2,816	0.049	0.217
	P_6: My parents don't like me very much	2,903	0.024	0.152	2,827	0.019	0.138
Sibling Outcasting	S_1: We fight a lot among ourselves	2,899	0.571	0.495	2,813	0.600	0.490
	*S_2: We trust one another	2,894	0.227	0.418	2,809	0.231	0.422
	*S_3: We try not to let one another down	2,894	0.249	0.432	2,811	0.226	0.418
	*S_4: We are affectionate toward one another	2,861	0.418	0.493	2,783	0.388	0.487

		Males			Females		
		N**	Mean	S/D	N**	Mean	S/D
Peer Outcasting	F_1: More often than not I feel put down by the kids at school	2,816	0.154	0.362	2,742	0.127	0.333
	F_2: The kids at school are usually not very interested in what I say or do	2,818	0.178	0.383	2,739	0.127	0.333
	F_3: Most of the kids at school do not like me very much	2,819	0.103	0.303	2,739	0.074	0.261
	*F_4: Do you have a lot of friends?	2,922	0.104	0.305	2,839	0.094	0.292
	*F_5: It is easy for me to find and make friends	2,915	0.175	0.381	2,838	0.141	0.348
Teacher Outcasting	T_1: My teachers are usually not very interested in what I say or do	2,823	0.139	0.345	2,748	0.102	0.303
	T_2: By my teachers' standards, I am a failure	2,821	0.030	0.170	2,745	0.019	0.134
	T_3: My teachers usually put me down	2,817	0.044	0.205	2,746	0.019	0.138
	T_4: My teachers do not like me very much	2,821	0.055	0.228	2,745	0.034	0.179

*Reverse Coded

**Sample size for each indicator. Maximum Likelihood is used to address missing data in model estimations

APPENDIX B

GENDERED DESCRIPTIVE STATISTICS OF SOCIAL CORRELATES

		Males			Females		
		N**	Mean	S/D	N**	Mean	S/D
Delinquent Peers	DF_1: Taken things worth between $2 and $50 that didn't belong to them?	2,893	0.181	0.386	2,817	0.119	0.324
	DF_2: Carried a razor, a switch blade or gun?	2,894	0.085	0.279	2,821	0.040	0.197
	DF_3: Used crack?	2,890	0.007	0.084	2,818	0.009	0.089
	DF_4: Taken part in gang fights?	2,893	0.049	0.217	2,821	0.031	0.173
	DF_5: Used marijuana?	2,893	0.111	0.313	2,820	0.083	0.276
	DF_6: Broken into & entered a home, store, or building?	2,891	0.042	0.200	2,820	0.014	0.118
	DF_7: Taken a car for a ride without the owner's knowledge?	2,892	0.040	0.197	2,821	0.029	0.170
	DF_8: Beat up on someone who had not done anything to them?	2,893	0.063	0.243	2,821	0.034	0.182
	DF_9: Smoked cigarettes regularly?	2,892	0.112	0.315	2,820	0.088	0.283
	DF_{10}: Shoplifted an item from a store?	2,892	0.118	0.322	2,820	0.087	0.281
	DF_{11}: Sold marijuana, grass, or hashish?	2,892	0.044	0.205	2,820	0.023	0.152
	DF_{12}: Taken narcotics?	2,891	0.028	0.164	2,819	0.023	0.152

		Males			Females		
		N**	Mean	S/D	N**	Mean	S/D
Perceived Neighborhood Problems	H_1: High unemployment	2,869	0.165	0.371	2,789	0.193	0.395
	H_2: Different racial or cultural groups do not get along	2,909	0.167	0.373	2,833	0.155	0.362
	H_3: Winos and Junkies	2,857	0.176	0.381	2,793	0.190	0.392
	H_4: Prostitution	2,856	0.052	0.221	2,790	0.048	0.214
	H_5: Abandoned Houses	2,913	0.196	0.397	2,834	0.182	0.386
	H_6: Sexual assaults or rapes	2,905	0.043	0.202	2,829	0.069	0.253
	H_7: Burglaries and thefts	2,914	0.305	0.460	2,836	0.276	0.447
	H_8: Gambling	2,902	0.182	0.386	2,825	0.141	0.348
	H_9: Rundown or poorly kept buildings and yards	2,913	0.176	0.381	2,833	0.181	0.386
	H_{10}: Syndicate, Mafia, or organized crime	2,885	0.079	0.270	2,790	0.069	0.251
	H_{11}: Assaults and muggings	2,910	0.114	0.318	2,825	0.100	0.300
	H_{12}: Gangs	2,911	0.333	0.471	2,829	0.309	0.462
Race/Ethnici	White	2,922	0.576	0.494	2,836	0.562	0.496
	Black	2,922	0.283	0.451	2,836	0.292	0.455
	Hispanic	2,922	0.131	0.338	2,836	0.137	0.344
	Other race	2,922	0.010	0.100	2,836	0.009	0.095
	Age Range 11-17	2,923	13.027	1.660	2,839	13.058	1.661
	Parental education: Parent's T7 survey, Range 1= some junior high, 8=post-graduate degree	2,914	4.743	1.331	2,829	4.732	1.354

	Males			Females		
	N	Mean	S/D	N	Mean	S/D
Impulsivity: I often act without stopping to think; 1=yes	2,873	0.537	0.499	2,816	0.488	0.500
Health: Range 4=no health problems (healthy); 1= health requires help eating, dressing, bathing or going to the bathroom	2,921	3.818	0.504	2,837	3.815	0.487

**Sample size for each indicator. Maximum Likelihood is used to address missing data in model estimations

APPENDIX C

GENDERED DESCRIPTIVE STATISTICS OF DELINQUENCY

		Males			Females		
		N**	Mean	S/D	N**	Mean	S/D
Nonviolent Delinquency	D_1: Took things worth between $2 and $50 that didn't belong to you?	2,917	0.106	0.308	2,836	0.056	0.230
	D_2: Took little things worth less than $2 that didn't belong to you?	2,918	0.166	0.373	2,836	0.077	0.266
	D_3: Took things from someone else's desk or locker at school without permission?	2,921	0.074	0.261	2,838	0.031	0.173
	D_4: Sold marijuana, grass or hashish [Combined with] sold narcotic drugs, dope or heroin?	2,921	0.029	0.170	2,838	0.007	0.084
	D_5: Broke into and entered a home, store, or building?	2,921	0.017	0.130	2,839	0.004	0.063
	D_6: Purposely damaged or destroyed public or private property that didn’t belong to you?	2,921	0.062	0.241	2,839	0.024	0.155
	D_7: Took a car for a ride without the owner's knowledge?	2,921	0.023	0.152	2,839	0.014	0.118
	D_8: Took things worth $50 or more that didn't belong to you?	2,919	0.029	0.167	2,839	0.010	0.100

		Males			Females		
		N**	Mean	S/D	N**	Mean	S/D
Violent Delinquency	D_9: Carried a razor, a switch blade or gun?	2,919	0.065	0.247	2,838	0.018	0.134
	D_{10}: Started a fist fight?	2,919	0.158	0.365	2,839	0.071	0.257
	D_{11}: Took part in gang fights?	2,920	0.027	0.164	2,838	0.010	0.100
	D_{12}: Used force to get money or valuables from another person?	2,921	0.012	0.110	2,839	0.002	0.045
	D_{13}: Beat up on someone who had not done anything to you?	2,920	0.026	0.158	2,839	0.010	0.095

**Sample size for each indicator. Maximum Likelihood used to address missing data in models

APPENDIX D

GENDERED DESCRIPTIVE STATISTICS OF NEGATIVE EMOTIONS

		Males			Females		
		N**	Mean	S/D	N**	Mean	S/D
Anger	If someone insulted me…						
	A_1: I would probably hit him	2,860	0.271	0.445	2,803	0.168	0.374
	A_2: I would probably insult him/her back	2,867	0.562	0.496	2,813	0.431	0.495
	A_3: I would probably think about ways I could get even	2,867	0.438	0.496	2,813	0.278	0.448
	A_4: I would probably take it out on someone else	2,863	0.075	0.263	2,812	0.080	0.272
	A_5: I would probably feel very angry but not do anything about it	2,869	0.505	0.500	2,814	0.579	0.494
	A_6: Do you often get angry, annoyed or upset?	2,877	0.491	0.500	2,815	0.477	0.499
Anxiety	N_1: Are you often bothered by nervousness?	2,882	0.293	0.455	2,818	0.358	0.480
	N_2: Are you often bothered by bad dreams?	2,884	0.207	0.405	2,823	0.254	0.435
	N_3: Do you often bite your fingernails?	2,878	0.441	0.497	2,818	0.470	0.499
	N_4: Are you often bothered by pressures or pains in the head?	2,876	0.211	0.409	2,822	0.219	0.414
	N_5: Are you often troubled by your hands sweating so that they feel damp & clammy?	2,875	0.245	0.430	2,817	0.203	0.402

**Sample size for each indicator. ML used to address missing data in models

APPENDIX E

STRUCTURAL MODEL EVALUATING THE INFLUENCE OF GSO ON GENERAL DELINQUENCY (FIGURE 4.4)

	Male Global Social Outcasting			Female Global Social Outcasting		
	β	S.E.	P-Value	β	S.E.	P-Value
Delinquent Peers	0.359	0.063	0.000	0.308	0.063	0.000
Perc. Neighborhood Prob.	0.234	0.053	0.000	0.241	0.050	0.000
Age	-0.057	0.034	0.100	-0.003	0.034	0.932
Black	-0.065	0.029	0.024	0.007	0.030	0.827
Hispanic	0.020	0.029	0.493	0.006	0.029	0.835
Other Race	-0.010	0.030	0.751	0.057	0.022	0.012
Parental Education	0.020	0.033	0.545	-0.089	0.037	0.018
Impulsivity	0.248	0.032	0.000	0.265	0.030	0.000
Health	-0.036	0.026	0.159	-0.119	0.028	0.000

	Male Anger			Female Anger		
	β	S.E.	P-Value	β	S.E.	P-Value
Global Social Outcasting	0.418	0.044	0.000	0.457	0.049	0.000
Delinquent Peers	0.303	0.057	0.000	0.144	0.058	0.013
Perc. Neighborhood Prob.	0.076	0.047	0.108	0.131	0.043	0.002
Age	-0.044	0.029	0.132	-0.002	0.029	0.935
Black	0.081	0.026	0.002	0.116	0.025	0.000
Hispanic	0.043	0.024	0.072	-0.006	0.022	0.773
Other Race	0.013	0.023	0.566	0.027	0.023	0.238
Parental Education	-0.031	0.028	0.258	-0.011	0.029	0.702
Impulsivity	0.232	0.029	0.000	0.204	0.028	0.000
Health	-0.021	0.023	0.362	-0.008	0.023	0.727

	Male Anxiety			Female Anxiety		
	β	S.E.	P-Value	β	S.E.	P-Value
Global Social Outcasting	0.538	0.057	0.000	0.450	0.058	0.000
Delinquent Peers	-0.137	0.076	0.072	0.004	0.070	0.953
Perc. Neighborhood Prob.	0.208	0.057	0.000	0.207	0.054	0.000
Age	-0.047	0.036	0.196	-0.032	0.033	0.343
Black	0.010	0.030	0.743	-0.051	0.030	0.087
Hispanic	0.002	0.029	0.954	0.001	0.026	0.975
Other Race	0.032	0.030	0.294	-0.007	0.026	0.801
Parental Education	-0.043	0.034	0.203	-0.002	0.033	0.957
Impulsivity	0.176	0.036	0.000	0.150	0.034	0.000
Health	-0.060	0.027	0.024	-0.107	0.025	0.000

	Male Delinquency			Female Delinquency		
	β	S.E.	P-Value	β	S.E.	P-Value
Global Social Outcasting	0.074	0.065	0.253	0.017	0.093	0.856
Anger	0.330	0.070	0.000	0.474	0.073	0.000
Anxiety	-0.209	0.060	0.001	-0.190	0.071	0.008
Delinquent Peers	0.646	0.053	0.000	0.484	0.079	0.000
Perc. Neighborhood Prob.	0.067	0.048	0.161	0.234	0.067	0.000
Age	-0.024	0.028	0.394	-0.063	0.042	0.137
Black	-0.033	0.032	0.303	-0.397	0.029	0.000
Hispanic	0.134	0.025	0.000	-0.212	0.022	0.000
Other Race	0.044	0.022	0.046	-0.025	0.036	0.484
Parental Education	0.003	0.027	0.905	-0.009	0.044	0.837
Impulsivity	0.066	0.033	0.042	0.105	0.042	0.012
Health	-0.030	0.028	0.296	-0.152	0.036	0.000

Source: KLAMS Generation II, Time I

APPENDIX F

STRUCTURAL MODEL EVALUATING THE INFLUENCE OF GSO ON

NONVIOLENT DELINQUENCY (FIGURE 4.5)

	Male Global Social Outcasting			Female Global Social Outcasting		
	β	S.E.	P-Value	β	S.E.	P-Value
Delinquent Peers	0.358	0.063	0.000	0.308	0.063	0.000
Perc. Neighborhood Prob.	0.236	0.053	0.000	0.240	0.050	0.000
Age	-0.060	0.035	0.084	-0.002	0.034	0.942
Black	-0.067	0.029	0.020	0.007	0.030	0.810
Hispanic	0.018	0.029	0.530	0.006	0.029	0.843
Other Race	-0.009	0.030	0.756	0.057	0.022	0.011
Parental Education	0.020	0.033	0.538	-0.089	0.037	0.017
Impulsivity	0.250	0.032	0.000	0.265	0.030	0.000
Health	-0.037	0.026	0.147	-0.119	0.028	0.000

	Male Anger			Female Anger		
	β	S.E.	P-Value	β	S.E.	P-Value
Global Social Outcasting	0.419	0.044	0.000	0.457	0.049	0.000
Delinquent Peers	0.304	0.057	0.000	0.144	0.058	0.013
Perc. Neighborhood Prob.	0.075	0.047	0.111	0.131	0.043	0.002
Age	-0.043	0.029	0.140	-0.003	0.029	0.914
Black	0.081	0.026	0.002	0.115	0.024	0.000
Hispanic	0.043	0.024	0.069	-0.006	0.022	0.779
Other Race	0.013	0.023	0.565	0.027	0.023	0.237
Parental Education	-0.031	0.028	0.256	-0.011	0.029	0.718
Impulsivity	0.233	0.029	0.000	0.204	0.028	0.000
Health	-0.021	0.023	0.356	-0.008	0.023	0.715

	Male Anxiety			Female Anxiety		
	β	S.E.	P-Value	β	S.E.	P-Value
Global Social Outcasting	0.543	0.057	0.000	0.450	0.059	0.000
Delinquent Peers	-0.138	0.076	0.070	0.003	0.070	0.961
Perc. Neighborhood Prob.	0.206	0.057	0.000	0.208	0.054	0.000
Age	-0.045	0.036	0.215	-0.031	0.033	0.344
Black	0.011	0.030	0.711	-0.051	0.030	0.082
Hispanic	0.003	0.029	0.929	0.001	0.026	0.970
Other Race	0.031	0.030	0.295	-0.007	0.026	0.799
Parental Education	-0.043	0.034	0.201	-0.002	0.033	0.963
Impulsivity	0.174	0.036	0.000	0.150	0.034	0.000
Health	-0.059	0.027	0.026	-0.107	0.025	0.000

	Male Nonviolent Delinquency			Female Nonviolent Delinquency		
	β	S.E.	P-Value	β	S.E.	P-Value
Global Social Outcasting	0.100	0.073	0.175	-0.001	0.102	0.989
Anger	0.283	0.079	0.000	0.451	0.084	0.000
Anxiety	-0.191	0.071	0.007	-0.151	0.078	0.054
Delinquent Peers	0.621	0.059	0.000	0.515	0.086	0.000
Perc. Neighborhood Prob.	0.010	0.055	0.855	0.220	0.073	0.003
Age	0.032	0.032	0.323	-0.069	0.047	0.147
Black	-0.032	0.035	0.366	-0.459	0.033	0.000
Hispanic	0.127	0.028	0.000	-0.233	0.023	0.000
Other Race	0.046	0.026	0.077	-0.020	0.048	0.672
Parental Education	-0.016	0.033	0.629	0.026	0.047	0.577
Impulsivity	0.066	0.037	0.074	0.124	0.047	0.009
Health	-0.031	0.030	0.290	-0.153	0.041	0.000

Source: KLAMS Generation II, Time I

APPENDIX G

STRUCTURAL MODEL EVALUATING THE INFLUENCE OF GSO ON VIOLENT DELINQUENCY (FIGURE 4.6)

	Male Global Social Outcasting			Female Global Social Outcasting		
	β	S.E.	P-Value	β	S.E.	P-Value
Delinquent Peers	0.355	0.063	0.000	0.312	0.064	0.000
Perc. Neighborhood Prob.	0.241	0.053	0.000	0.241	0.050	0.000
Age	-0.064	0.035	0.067	-0.006	0.034	0.854
Black	-0.070	0.029	0.017	0.007	0.031	0.818
Hispanic	0.016	0.029	0.569	0.006	0.029	0.841
Other Race	-0.009	0.030	0.756	0.057	0.023	0.011
Parental Education	0.021	0.033	0.531	-0.089	0.038	0.018
Impulsivity	0.253	0.032	0.000	0.266	0.031	0.000
Health	-0.039	0.026	0.132	-0.121	0.028	0.000

	Male Anger			Female Anger		
	β	S.E.	P-Value	β	S.E.	P-Value
Global Social Outcasting	0.423	0.044	0.000	0.464	0.050	0.000
Delinquent Peers	0.300	0.057	0.000	0.142	0.059	0.017
Perc. Neighborhood Prob.	0.074	0.048	0.119	0.128	0.043	0.003
Age	-0.039	0.029	0.180	-0.002	0.029	0.954
Black	0.082	0.026	0.002	0.116	0.025	0.000
Hispanic	0.043	0.024	0.070	-0.006	0.022	0.785
Other Race	0.013	0.023	0.560	0.027	0.023	0.247
Parental Education	-0.034	0.028	0.216	-0.010	0.030	0.735
Impulsivity	0.232	0.029	0.000	0.202	0.028	0.000
Health	-0.021	0.023	0.367	-0.007	0.023	0.772

	Male Anxiety			Female Anxiety		
	β	S.E.	P-Value	β	S.E.	P-Value
Global Social Outcasting	0.553	0.057	0.000	0.459	0.059	0.000
Delinquent Peers	-0.140	0.076	0.066	0.002	0.071	0.978
Perc. Neighborhood Prob.	0.201	0.058	0.000	0.204	0.054	0.000
Age	-0.043	0.037	0.241	-0.031	0.034	0.357
Black	0.013	0.030	0.666	-0.051	0.030	0.088
Hispanic	0.003	0.029	0.908	0.001	0.026	0.960
Other Race	0.032	0.030	0.295	-0.007	0.026	0.783
Parental Education	-0.044	0.034	0.198	0.000	0.033	0.995
Impulsivity	0.170	0.036	0.000	0.147	0.034	0.000
Health	-0.058	0.027	0.029	-0.105	0.025	0.000

	Male Violent Delinquency			Female Violent Delinquency		
	β	S.E.	P-Value	β	S.E.	P-Value
Global Social Outcasting	0.038	0.082	0.643	0.071	0.122	0.559
Anger	0.395	0.093	0.000	0.402	0.091	0.000
Anxiety	-0.236	0.072	0.001	-0.212	0.089	0.017
Delinquent Peers	0.663	0.065	0.000	0.515	0.094	0.000
Perc. Neighborhood Prob.	0.144	0.054	0.008	0.094	0.077	0.224
Age	-0.111	0.032	0.001	-0.039	0.052	0.450
Black	-0.033	0.038	0.390	0.078	0.045	0.082
Hispanic	0.141	0.028	0.000	0.039	0.044	0.373
Other Race	0.038	0.026	0.134	-0.026	0.053	0.632
Parental Education	0.034	0.034	0.316	-0.025	0.058	0.662
Impulsivity	0.059	0.040	0.135	0.048	0.056	0.385
Health	-0.026	0.031	0.413	-0.131	0.039	0.001

Source: KLAMS Generation II, Time I