

9-2018

A Narrative Approach to Investigating the Contextual Nature of Adolescent Self-Regulation

Kelly Conover

The Graduate Center, City University of New York

[How does access to this work benefit you? Let us know!](#)

Follow this and additional works at: https://academicworks.cuny.edu/gc_etds

 Part of the [Developmental Psychology Commons](#)

Recommended Citation

Conover, Kelly, "A Narrative Approach to Investigating the Contextual Nature of Adolescent Self-Regulation" (2018). *CUNY Academic Works*.

https://academicworks.cuny.edu/gc_etds/2881

This Dissertation is brought to you by CUNY Academic Works. It has been accepted for inclusion in All Dissertations, Theses, and Capstone Projects by an authorized administrator of CUNY Academic Works. For more information, please contact deposit@gc.cuny.edu.

A NARRATIVE APPROACH TO INVESTIGATING THE CONTEXTUAL NATURE OF
ADOLESCENT SELF-REGULATION

by

Kelly Conover

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the
requirements of the degree of Doctor of Philosophy, The City University of New York

2018

© 2018

KELLY CONOVER

All Rights Reserved

A Narrative Approach to Investigating the Contextual Nature of Adolescent Self-Regulation

by

Kelly Conover

This manuscript has been read and accepted for the Graduate Faculty in Psychology in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

Date

Colette Daiute

Chair of Examining Committee

Date

Richard Bodnar

Executive Officer

Supervisory Committee:

Herb Saltzstein

Stacey Alicea

Luka Lucic

Myriam Villalobos

THE CITY UNIVERSITY OF NEW YORK

ABSTRACT

Self-regulation has been identified as important for academic achievement, positive mental health, and social success (Steinberg, 2014, Mischel, 2014). This inquiry begins with self-regulation defined traditionally as “modulation of thoughts, emotions and behaviors working in conjunction, with deliberate or automated use of specific mechanisms and skills” (Karoly, 1993, pg. 25) and extends beyond that and similar definitions to a definition that adds “as enacted in relationships and situations with culturally-relevant media.” The need for such an expansion urgently accounts for the fact that young people are living in high-risk settings, where trauma, violence and economic difficulty are implicated not only in psycho-physical development but also in environments that involve threats and/or supports for individuals’ self-regulation. Thus, research findings that many adolescents living in high-risk settings drop out of high school, exhibit poor psychological functioning, and lack of positive relationships (Steinberg, 2014; Tough, 2012), must be examined as interdependent environmental and individual processes. Traditional standardized measures such as surveys, experts’ observations, and assessments with questionnaires and lab-based tasks can only point to an ability or inability to self-regulate as though it were a stable trait rather than a relational process. Such assessments of self-regulation limit the knowledge we gain from these research findings and thus the types of ongoing research and clinical practice we can develop. To address the lack of complexity in prior theory and method on adolescent self-regulation, the present study brings context – relational role, setting, and expressive medium into an understanding of self-regulation. In contrast to commonly used assessments that evaluate self-regulation skill as a whole, against normative standards, this study employs adolescents’ perspectives from diverse positions around

issues of conflict for practical as well as theoretical implications. Previous research using a narrative measure found that adolescents living in high-risk settings self-regulated differently in different contexts and when taking on different author roles in narrating a conflict situation (Conover and Daiute, 2017). Expanding on that pilot study, the project presented in this dissertation aims to address the following research questions, (1) How does adolescent self-regulation in narratives of social conflicts vary by relational context (family, school, peer) and adolescents' role as a participant in the conflict? (2) How do context/role sensitive measures of self-regulation (process assessments) compare to the Adolescent Self-Regulatory Inventory (ASRI), a trait-based measure, in terms of participant performances?

The current study uses a mixed-methods qualitative exploratory research design. Narrative activities and a standardized measure of adolescent self-regulation were used to elicit self-regulation strategy knowledge and self-regulation strategy use across a range of situations and relationships like those in adolescents' lives. Participants were presented with narratives simulating real-life conflict situations and asked to create narratives in response to the situations. Through this, participants worked through and made meaning of the presented situations, demonstrating differences in responses across context and author role. Finally, participant voice was elicited through the reflective activities that promote reflection and clarification of how and why participants responded to conflict situations similarly or differently in the various contexts and author roles. Similar analyses of the participants narratives in a series of text message scenarios and their reflections on questions about differences across the narrative and standard measures provide a means of comparing contributions of the different types of narrative contexts, thereby offering insights toward expanding the concept of adolescent self-regulation.

Narrative Plot analysis was used to identify the plot elements and psychological states mentioned in the narratives and analyze the differences in the use of these plot elements and psychological states by context and author role. Two dimensions of relational processing of the conflict situations were identified: processing cause and effect and cognitive and affective symbolizations. Cause and effect were defined by the Complicating Actions and Resolution Strategies used in the narratives while cognitive and affective symbolizations were defined by the uses of cognitive and affective terms. Self-regulation strategies were identified within the narratives and categorized into four types of self-regulation strategies. ANOVAs with post hoc comparisons were used to support the findings of the narrative analysis.

Findings of the current study indicate that participants enacted conflict situations differently depending on the relational roles within which they were narrating. The escalation and resolution of a conflict occurred differently across authors roles and contexts as was the use of cognitive and affective symbolization. Different types of self-regulation strategies in the varied author roles and contexts were used in narrating the conflict situations. For example, conflict escalation, as indicated by mentions of complicating actions, occurred most frequently in the As Self: Before Texting narratives while conflict resolution, as indicated by mentions of resolution strategies, was most frequently used in the As Recipient of Advice from Mentor and As Youth Advisor to Younger Relative roles. Conflict escalation was most emphasized in Peer context narratives, but conflict resolution occurred more frequently in the Family context narratives. Types of self-regulation strategies used varied by context with participants including more affective strategies in the Peer narratives as compared to the Family context, where participants included more active strategies.

Although the current literature suggests adolescents living in high-risk settings have poor self-regulation ability, the ASRI scores of participants in the current study were normally distributed, providing evidence to the contrary. There was no correlation found between ASRI scores and number of resolution and self-regulation strategy mentions, emphasizing the limitations of a standardized assessment. The lack of correlation between ASRI scores and mentions of resolution and self-regulation strategies indicates the need for more context sensitive measures, such as the relational narratives used in this study, which can provide greater detail about an adolescent's knowledge and use of self-regulation strategies. Supporting these findings were common participant narratives found in the Reflective Activity responses in which participants cited interpersonal relationships and their own ability to use self-regulation strategies as reasons for why they did or did not use various strategies. Overall, results indicate that the context/role sensitive measures used in this study offer a complex understanding of adolescent self-regulation as a social-relational process characterized by context-sensitivity diversity within individual participants, rather than as a stable skill. While the Adolescent Self-Regulatory Inventory offers one numerical score of self-regulation skill, the context/role sensitive measures used in this study provide evidence for variation in adolescent self-regulation, defining self-regulation as a complex relational skill.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION TO SELF-REGULATION AS DISCUSSED IN THE LITERATURE.....	1
Addressing the Complexity of Adolescent Self-Regulation	1
Gaps in the Literature: Individualistic, Trait-based Approaches and Evaluation of Self-Regulation	3
Individualistic frameworks and various methods for examining self-regulation.	4
Varying definitions of self-regulation.	11
The Need for a Relational Approach to Understanding Adolescent Self-Regulation.....	12
Cultural Historical Activity Theory as a relational framework for adolescent self-regulation.	14
Project Aims.....	16
CHAPTER 2: RESEARCH METHODS TOWARD A COMPLEX UNDERSTANDING OF ..	18
ADOLESCENT SELF-REGULATION.....	18
Research Design.....	18
Participants.	18
Recruitment.	19
Texting Messaging as a Cultural and Clinical Tool.....	20
Measures.....	21
Part I: Narrative activities.....	21
Part II: Standardized Measure	28
Part III: Reflective Activity	29
Data Analysis	29
Part I: Self-regulation in the narratives.....	30
Part II: Self-regulation as captured by the standardized measure	31
Part III: Reflective Activity Analysis	32
Self-regulation compared between narratives and ASRI.	32
CHAPTER 3: CONFLICTS ARE EXPERIENCED AND PROCESSED DIFFERENTLY BY ADOLESCENTS IMAGINING THEMSELVES IN DIFFERENT ROLES AND CONTEXTS	36
Conflict Escalation and Resolution Vary by Author Role in Narrated Conflicts	37
Adolescent’s processing of conflict varies by author role.....	43
Psychological states change as conflict is experienced via the diverse author roles.....	46

Different sets of characters are used when narrating from each author role perspective.	48
How Does Experiencing and Processing Conflict Vary by Role?	50
CHAPTER 4: EXPERIENCING AND PROCESSING CONFLICT VARIES BY CONTEXT.	51
Conflict Escalation and Resolution Vary by Context of Narrated Conflicts	51
Adolescents' processing of conflict varies by context of the conflict.	55
Different sets of characters are used when narrating in each context.	57
How does Experiencing and Processing Conflict vary by Context?.....	59
CHAPTER 5: YOUTH KNOW A VARIETY OF SELF-REGULATION STRATEGIES.....	60
Types of Self-Regulation Strategies Used Vary by Author Role.....	60
Types of Self-Regulation Strategies Used vary by Context.....	63
When Narrating a Conflict Situation, does the Author Role of the Participant and Context of the Conflict Determine the Self-Regulation Strategies Used?	65
CHAPTER 6: YOUTH INTERPRET DIVERSE NARRATIVES	66
ASRI Scores Follow a Normal Curve	66
Reflection and analysis of reflective activity responses.....	69
Reflection and analysis of characters	72
Reflection and analysis of actions.	75
Reflection and analysis of psychological states	79
Participants' Explanation of Self-Regulation.....	79
How do context/role sensitive measures of self-regulation (process assessments) compare to the Adolescent Self-Regulatory Inventory?	81
CHAPTER 7: ADOLESCENT SELF-REGULATION IS A RELATIONAL SKILL	83
How does Experiencing, Processing and Self-Regulating in a Conflict Vary by Role?.....	83
How Does Experiencing, Processing and Self-regulating in a Conflict Vary by Context?	87
How do Context/Role Sensitive Measures of Self-Regulation Compare to the Adolescent Self- Regulatory Inventory?.....	90
CHAPTER 8: IMPLICATIONS FOR FUTURE PRACTICE-BASED RESEARCH.....	94
APPENDIX.....	97
REFERENCES	108

LIST OF TABLES

Table 1. <i>Research Design Chart</i>	34
Table 2. <i>Number and Percentage of Plot element and Psychological state categories in each Narrating Role</i>	40
Table 3. <i>Examples of Complicating Actions and Resolution Strategies in Each Role Category</i> ..	42
Table 4. <i>Examples of Psychological States in Each Role Category</i>	45
Table 5. <i>Psychological States used in each Plot Element</i>	47
Table 6. <i>Number of Character Mentions in Narratives by Role</i>	49
Table 7. <i>Number and Percentage of Plot Element and Psychological State Categories Across Narrative Setting Contexts</i>	53
Table 8. <i>Examples of Complicating Actions and Resolution Strategies in Each Expressive Context</i>	54
Table 9. <i>Examples of Psychological States in Each Context</i>	56
Table 10. <i>Number of Character mentions in Narratives by Context</i>	58
Table 11. <i>Types of Self-Regulation Strategies Used in Each Role</i>	62
Table 12. <i>Types of Self-Regulation Strategies Used in Each Context</i>	64
Table 13. <i>Descriptives of ASRI Scores</i>	68
Table 14. <i>Plot Elements Found in each Reflective Activity Response</i>	71
Table 15. <i>Characters Mentioned in each Reflective Activity Response</i>	73
Table 16. <i>Actions Mentioned in each Reflective Activity Response</i>	76

LIST OF FIGURES

Figure 1. <i>Example text messages shown participants representing Peer, Family and School Context</i>	23
Figure 2. <i>Previous participant Peer context text message responses</i>	25
Figure 3. <i>Previous participant School context text message responses</i>	26
Figure 4. <i>Previous participant Family context text message responses</i>	27
Figure 5. <i>Histogram of ASRI Score</i>	68

CHAPTER 1: INTRODUCTION TO SELF-REGULATION AS DISCUSSED IN THE LITERATURE

Addressing the Complexity of Adolescent Self-Regulation

Self-regulation, was traditionally defined as “modulation of thought, emotions and behaviors working in conjunction, with deliberate or automated use of specific mechanisms and skills” (Karoly, 1993, p. 25). During adolescence, self-regulation has been found to be an important key for academic achievement, healthy relationships, positive mental health, career attainment and overall life success (Steinberg, 2014). An emphasis is put on academic achievement, peer and romantic relationships, healthy decision-making, and future education and career attainment by adults during this developmental period (Arnett, 2001). However, adolescence is also characterized by heightened sensation seeking, reward-focused behavior, risky decision-making and risk-taking (Lightfoot, 1997; Romer, 2010; Steinberg, 2014). Adults, namely parents and teachers, expect adolescents to mature in specific ways, such as making healthy decisions and being in complete control of their emotions, as they prepare to transition into adulthood, and those expectations often conflict with the young people’s emotional, cognitive and behavioral perspectives and their development. Because adolescent brains are still developing, self-regulation is unique in this developmental period, making it difficult for adolescents to meet adult expectations and demands (Blakemore & Robbins, 2012; Romer, 2010). Adolescence is, moreover, the second period of heightened brain plasticity, making it an ideal time for adults to model and reinforce self-regulation skills through interactions and interventions (Steinberg, 2014). Research literature identifies adolescents living in high-risk settings as having poor self-regulation skill (McClelland, Geldhof, Morrison, Gestsdottir,

Cameron, Bowers, Duckworth, Little & Grammer, 2017). High-risk settings are defined as settings in which experiences of trauma, family conflict, community violence and economic difficulty are prevalent (Masten & Coatsworth, 1998; Tolan, Gorman-Smith & Henry, 2004). Adolescents living in high-risk settings are often presented with situations that call for significant regulation of emotions, thoughts and behaviors, yet these contexts are not considered ideal for building these skills (Gilligan, R. 2006; Gross, 2002). However, the low self-regulation skill assessed in adolescents living in high-risk settings may not necessarily reflect a genuine self-regulation ability. Assessments typically do not take context into consideration but rather assess general self-regulation skill, against normative standards. Measures that capture adolescents' perspectives on their circumstances make a difference not only for research but also for practice and development.

Previous research has emphasized the importance of self-regulation and trajectories from adolescent self-regulation to adult outcomes (Mischel, 2014; Tough, 2012). From regulating stress responses in everyday life to regulating cognitions to help them focus and stay motivated as they complete schoolwork, adolescents use a set of fundamental skills that do not naturally develop but are learned and strengthened with assistance from adults (Steinberg, 2014). Much of the literature focuses on the antecedents and consequences of self-regulation within individuals and groups. Poverty and poor attachment have been named as risk factors, or characteristics at the community and family level that are associated with a higher likelihood of negative outcomes. Adult modeling of self-regulation strategies and early intervention have been named as protective factors, or characteristics associated with a higher possibility of positive outcomes (Bernier, Beauchamp, Carlson & Lalonde, 2015; McClelland, Geldhof, Morrison, Gestsdottir, Cameron, Bowers, Duckworth, Little & Grammer, 2017; Tough, 2012). Because of the

complexity of self-regulation, the current literature is varied in its approach to examination of the skill. The various frameworks used in previous research will be discussed below as will justification for their support in the development of a more comprehensive, relational framework to examining adolescent self-regulation. In addition, gaps in the current literature, including the different and, often individualistic, approaches to defining and measuring self-regulation will be addressed.

Gaps in the Literature: Individualistic, Trait-based Approaches and Evaluation of Self-Regulation

Previous research has focused primarily on biological (such as in the individual temperament and emotions) and social psychological (such as via socialization by parenting) notions of self-regulation. Definitions of self-regulation and measures to assess it have been likewise focused on the individual or social reproductions. The self-regulation research literature has a major focus on early childhood self-regulation skill building and intervention, namely within the classroom. The scant adolescent self-regulation research is heavily based on self-regulated learning within the classroom. To support adolescents' positive development, practitioners and researchers must understand the complexity of adolescent self-regulation, acknowledging the differences across contexts and interpersonal interactions. With an understanding of how adolescent self-regulation varies by context and interpersonal interaction, adults can develop appropriate expectations of adolescents emotional, cognitive and behavioral regulation capacities. A more comprehensive understanding of adolescent self-regulation than is described in the existing literature will allow for the creation of supportive environments where self-regulation strategies can be better understood, modeled and reinforced. Self-regulation strategies are defined as the ways in which one controls his or her thoughts, emotions and

behaviors. After a review of the limits of the current literature, including the frameworks, definitions and methods used to examine self-regulation, I will expand this discussion to argue for a research design that integrates the under-examined relational interaction of adolescents in context via the use of cultural media.

Individualistic frameworks and various methods for examining self-regulation.

The frameworks and methods used to examine self-regulation vary from neuropsychology to positive youth development, emphasizing the complexity of this skill, but also the individualistic nature of approaches to exploring this skill. Frameworks for the development and assessment of self-regulation encompass self-regulated learning in the classroom to self-regulated management of health conditions (Mann, de Ridder & Fujita, 2013; Bjork, Dunlosky & Kornell, 2013). A neuropsychological framework uses the development of different brain regions to explain the development of self-regulation (Gyurak, Gross & Etkin, 2011) while a systems framework suggests that affect and behavior systems act as feedback control mechanisms, and recalibration of this system evidences self-regulation (Carver & Scheier, 2000). Within a cognitive framework, one's beliefs about the malleability of emotions influences self-regulation (Molden & Dweck, 2006). This cognitive framework suggests that poor self-regulation ability is a result of one's beliefs related to their own ability and not an actual reflection of their genuine ability to self-regulate (Job, Dweck & Walton, 2010). A commonality of these frameworks is their assumption of self-regulation as a trait of the self, rather than a contextual and relational skill.

As a result of the various frameworks for exploring self-regulation, current measures can be conflicting and limiting. Approaches to measuring self-regulation tend to be individualistic, or unique to each study, and range from direct assessment of the skill to assessment of skills

associated with self-regulation. These approaches include standardized measures, observations, parent/teacher reports and lab-based task and ask subjective questions such as “I control my emotions by not expressing them” and “I find it difficult to keep my mind on something, and am easily distracted.” Because these prompts are not situated in context, they are open to the participant’s interpretation of the context referenced. Responses to these prompts may also vary across situations yet the one Likert-type scale provided for participant responses does not allow for distinction across contexts. To ensure a comprehensive, relational and contextual approach to self-regulation, the current research is supported collectively, rather than individually, by the following four theoretical frameworks: Social cognitive framework, neuropsychological framework, positive youth development framework and Cultural Historical Activity Theory. The supporting elements of these frameworks will be discussed and the variety of methods will be highlighted to support the argument for further development of a comprehensive, relational framework of self-regulation.

A Social Cognitive approach to self-regulation.

A Social Cognitive framework emphasizes the importance of environment in psychosocial development and states that one acquires information from his or her environment through observation and imitation of others’ behaviors and attitudes (Bandura, 2001). More specifically, Social Cognitive Theory explains psychosocial functioning as a “model of reciprocal causality, internal personal factors in the form of cognitive, affective and biological events, behavioral patterns and environmental influences all operate as interacting determinants that influence one another bidirectionally” (Bandura, 2001, p.14). From a Social Cognitive lens, self-regulation is understood not as one internal state that is experienced, but as mental processes

through which an individual has agency over their cognitions, emotions and behaviors (Zimmerman, 2000).

According to Bandura (2001), self-regulation is a process that is influenced by a variety of components, including environmental influences. The bond between a caregiver and child is one environmental influence on self-regulation. Children who have a secure attachment to a caregiver in early childhood are less likely to exhibit behavioral issues and attention difficulties, both components of self-regulation (Ainsworth, 1985; Tough, 2012). However, severely anxiously attached children tend to display more anti-social and immature behavior and are therefore classified by their teachers and other adults as having greater behavioral problems (Ainsworth, 1972). Anxious attachment to a caregiver can also result in difficulty regulating one's stress response system. With a negative, or highly reactive stress-response system, there is little room for a positive self-regulation process to occur, but rather an immediate, often impulsive, reaction to the situation (Gunnar and Fisher, 2006; Cicchetti, Rogosch, & Toth, 2006; Tough, 2012).

Bernier, Beauchamp, Carlson and Lalonde's (2015) study of environmental influences on executive functioning, also referred to as self-regulation, found that caregivers who create a secure attachment with their child may be communicating frequently and teaching conflict resolution strategies to their children through modeling positive self-regulation. Methods of Bernier, et al.,'s study included measures of executive functioning, such as the Flanker Task and other inhibitory tasks, while teachers' ratings of executive functioning were obtained through the BRIEFF, a standardized Likert-type questionnaire (BRIEF; Gioia, Espy, & Isquith, 2003). Classroom environments have also been examined in the self-regulation research, using observational methods specific to self-regulated learning (Ponitz, McClelland, Matthews, &

Morrison, 2009). These measures frequently involve observation of children engaged in specific inhibitory activities, such as the Head Toes Knees Shoulders task in Tominey and McClelland's (2011) study on behavioral self-regulation. However, observational measures can be subjective to the observer's interpretation of interactions and observational tasks within the classroom are restricted to one context.

Overall, self-regulation research using a Social Cognitive framework is often limited to infants and children, making it difficult to translate findings to adolescent self-regulation. A Social Cognitive framework suggests that in infancy and childhood, self-regulation is a result of a reciprocal, agentic learning process an individual has with their environment, but lacks an examination of how in adolescence, contexts, and relationships within these contexts, influence self-regulation, and more specifically, the strategies used to self-regulate. In addition, exploration of self-regulation from a Social Cognitive framework assumes environmental influence on the development of a trait, rather than a skill that varies by environment and develops with age and excludes acknowledgement of the individual's strengths within these environments.

A Positive Youth Development approach in adolescent research.

The Positive Youth Development framework employs a strengths-based approach to adolescent development as opposed to the traditional deficit approach. Rather than describing adolescents as "lacking" in skill, the Positive Youth Development approach recognizes the unique strengths and potential of the adolescent as related to the focus of the research and encourages environments to support achievement of that potential (Lerner, 2005). Therefore, from this perspective, adolescent self-regulation is not understood as an undeveloped skill. Instead, attention is given to adolescents' self-regulation potential and current strengths, which

are a result of their unique experiences. The concept of positive youth development suggests that adolescents' relationships with caring and supportive adults are an important resource for positive development. These are adults who have appropriate expectations of adolescent development and cultivate supportive environments that promote success (Bowers, Johnson, Warren, Tirrell & Lerner, 2015). Supportive environments create opportunities that result in strengthening life skills such as coping skills, peer relationships, self-esteem and sense of agency. These life skills can then lead to academic success, positive mental health and healthy relationships. Unlike much of the current literature, the PYD approach does not recognize adolescents living in high-risk settings as unskilled, but as having unique self-regulation strengths because of their unique experiences in their environment. Self-regulation examined within a PYD framework often uses the term "intentional self-regulation" to emphasize the agency a child or adolescent has over their self-regulation skill (Chauveron, Linver, & Urban, 2015; Gestsdottir and Lerner, 2008) and uses questionnaires based on the Selection, Optimization and Compensation method, which is a model of an individual's mutual contributions to their relationship with their context (Gestsdottir, Geldhof, Paus, Freund, Adalbjarnardottir, Lerner, & Lerner, 2015).

Although this framework takes a strengths-based approach to research with children and adolescents, while focusing on the strengths of the individual, it still proves to be an individualistic approach. A PYD research approach often identifies an individual's strengths in regard to environmental influences but lacks examination of how these strengths may present in contexts differently depending on the relational interaction of adolescents within these contexts. Also, research using a PYD framework tends not to consider the role of brain development on adolescents' capacity for self-regulation and decision-making related to use of self-regulation

strategies (Gestsdottir and Lerner, 2008; Mueller, Phelps, Bowers, Agans, Urban & Lerner, 2011).

Brain development in adolescence.

Because of brain development during adolescence, adolescent behavior becomes more focused on rewards with an inverse relationship between reward focused behavior and self-regulation (Steinberg, 2014). In addition, research suggests that adolescent behavior is often influenced by emotion (Albert and Steinberg, 2011; Somerville, 2013; Sturman and Moghaddam, 2011). Therefore, adolescence is a developmental period characterized by what is considered risky behavior and poor decision making (Albert, Chein and Steinberg, 2016). Living in a high-risk setting has been shown to negatively affect brain development, specifically the prefrontal cortex, which houses self-regulation (Kinniburgh, Blaustein, Spinizzola and Kolk, 2005; Foulkes and Blakemore, 2018; Steinberg, 2014). In addition, as mentioned above, high-risk settings may reinforce self-regulation strategies that are not typically considered appropriate in other contexts, resulting in an adolescent being identified as having poor self-regulation skill. Adolescence is a second period of heightened brain plasticity and therefore, there are major possibilities for development in this biologically and socially liminal decade of life (Steinberg, 2014). The more a brain region is activated, the stronger it becomes and therefore, there is great potential for self-regulation development during adolescence. This development heavily relies on not just biological brain development, but also environmental impact influences such as parenting style, presence of adults who model positive self-regulation investigation strategies and risky decision-making within a safe context (Steinberg, 2014).

In a study focusing on the development of self-regulation over time from childhood to adolescence, Raffaelli, et al. (2005) utilized items on the Behavior Problem Index (BPI: Zill,

1990) to measure self-regulation. Items with prompts most closely related to emotion, attention and behavior regulation were combined to create a global self-regulation score. This can be problematic as the BPI was created to identify problem behaviors in children and not assess self-regulation skill. Flanker Tasks, computerized tests used to assess response inhibition, are also used as neuropsychological measures of self-regulation (Spreen, Strauss, & Sherman, 2006). Similar to some standardized measures, Flanker Tasks and other lab-based tasks do not directly measure self-regulation, but skills associated with self-regulation, making assumptions about the participant's skill.

Brain development and its influence on behavior and behavior changes throughout adolescence is important for setting appropriate expectations of adolescent self-regulation and creating successful environments for supporting positive development. However, to fully investigate that relational properties of this skill, adolescent self-regulation cannot be examined by a neuropsychological framework alone. Neuropsychological research can provide evidence for environmental effects on brain development and thereby influences on adolescent decision-making and self-regulation capacities, but it is still an individualistic approach. This framework leaves out the contextual and relational nature of self-regulation and does not consider variation of self-regulation strategy use within these contexts and interpersonal relationships. One framework closely associated with the relational nature of adolescent self-regulation, is Cultural Historical Activity Theory, which will be later discussed in the need for a relational approach to adolescent self-regulation. First, the various ways in which self-regulation is operationalized in the current literature will be reviewed to emphasize the need for a uniform definition, ensuring consistent measurement.

Varying definitions of self-regulation.

The importance of self-regulation skill is recognized across disciplines, resulting in a surge of research in this area. However, self-regulation is often reduced to its components, with separate investigation of emotion, cognitive and behavioral regulation. As a result, emotion regulation has emerged as a popular area of interest. In some cases, self-regulation and emotion regulation are used interchangeably as are self-control and self-regulation. In their study on the link between self-regulation and risk-taking behaviors, Magar, Phillips and Hosie (2007) define self-regulation as “the ability to control, modify, and adapt one’s emotions, impulses or desires and can be broken down further into the two-subcategories of emotion regulation and cognitive regulation” (p. 153). However, Raffaelli, Crockett and Shen (2005) used the definition “the internally-directed skill to regulate affect, attention, and behavior to respond effectively to both internal and environmental demands” (p. 54). Kochanska, Coy and Murray (2001) investigated the development of self-regulation using parent-child observations and defined self-regulation as “flexibility of control processes that meet changing situational demands” (p. 1091). In their study, Cole, Smith-Simon and Cohen (2008) used the terms “emotion regulation” and “self-regulation” interchangeably, implying that these two terms have an identical meaning.

While some authors identified self-regulation as a skill impacted by internal factors (e.g., “the ability to control, modify, and adapt one’s emotions, impulses or desires” (Magar, et al, 2007, p. 153) others identified the role of the environment and external factors in their definition (e.g. “the internally-directed skill to regulate affect, attention and behavior to respond effectively to both internal and environmental demands”) (Raffaelli, et al. 2005, p. 54). Definitions of self-regulation included cognitive and emotion regulation (Magar, Phillips & Hosie, 2007) while others excluded cognitive regulation but included behavior regulation (Cole et al., 2008 and

Shields, Cicchetti & Ryan, 1994). In addition, Shields et al., (1994) identified emotion and behavior regulation as components of self-regulation but examined them separately, implying that they occur in isolation. With variable definitions of self-regulation, assuming it to be a static trait, it becomes difficult to measure this relational and contextual skill. For the purposes of this study, self-regulation is being defined as “modulation of thought, emotions and behaviors working in conjunction, with deliberate or automated use of specific mechanisms and skills” (Karoly, 1993, p. 25).

The Need for a Relational Approach to Understanding Adolescent Self-Regulation

While current frameworks of adolescent self-regulation research offer distinct insights into the skill, these independent frameworks could provide greater benefit when incorporated together, in a more comprehensive, holistic approach. Current frameworks are disconnected and provide isolated concepts of self-regulation. For example, a neuropsychological framework has a primarily biological focus and a social cognitive framework lacks biological influences in its explanation of self-regulation. However, the contexts, challenges and resources of environments implicate context into adolescent development. Youth in high-risk settings, for example, have to adapt their perception and strategies with the challenges and resources they have available. Also evident in the current literature are inconsistent definitions of self-regulation with self-regulation and other terms, such as executive functioning, used interchangeably within the same study and definitions of self-regulation used inconsistently across the literature. What’s missing in the current literature is a comprehensive, holistic framework to approaching adolescent self-regulation, or a relational theory and method, including previous frameworks while embedding context and relationships. This holistic theory of self-regulation would then be beneficial for creating a uniform definition of self-regulation.

Such a theory would suggest that adolescent self-regulation is more than a result of strategy knowledge, but a result of situational considerations that include context and interpersonal relationships.

The current study argues that the current self-regulation literature, while comprehensive, is missing an examination of the complexity of adolescent self-regulation, namely the contextual and relational aspects of the skill. Self-regulation research that accounts for context typically occurs within one context, usually peer or family groups. However, this does not provide a complete picture of one's self-regulation ability nor does it address how self-regulation may differ from one context to the next. In addition, the current research does not typically consider norms associated with contexts or relationships with the people in those contexts and how they may influence an individual's self-regulation. Not all approaches to regulating thoughts, feelings and behaviors are appropriate in every context, nor are they always adaptive (Buckner, Mezzacappa & Beardslee, 2009). Self-regulation is typically described as an "all or nothing" trait-based skill, a skill that one has or does not have. Some of the current literature, such as Buckner, Mezzacappa and Beardslee's (2009) study on self-regulation among low-income youth, does acknowledge individual variation in self-regulation skill as an adaptive function and the adaptive nature of the skill. However, research could benefit from a more complete examination of self-regulation, with an approach that acknowledges the influence of adolescents' relational interactions in context on self-regulation. One existing framework, Cultural Historical Activity Theory, supports a relational approach to adolescent self-regulation and is used to support the aims of the current study.

Cultural Historical Activity Theory as a relational framework for adolescent self-regulation.

Cultural Historical Activity Theory of development posits cognitive development as a process influenced by adults who engage children in meaningful activities, including symbolic activities that allow children to take on different roles through play (Vygotsky, 1978). Through these activities, adults communicate to children using cultural tools, enacting cultural norms to help them learn how to interpret, respond to and make sense of the world. To make sense of their world, including various contexts, challenges and opportunities, adolescents use media to take on different roles, and by using this media, what is salient to young people in different situations and at different times can be identified (Daiute, 2014; John-Steiner and Mann, 1996). Cultural Historical Activity Theory emphasizes the relationship between the mind and the social world mediated by cultural tools or artifacts and suggests that each environment allows a different set of freedoms and therefore each environment has different norms and expectations associated with it (Vygotsky, 1978). Within each environment, people participate in social relations in different ways with a range of different capacities – including cognition, emotion, social, and physical enactments. Therefore, when engaging in the different activities of each environment, an individual takes on different roles.

Vygotsky and other psychologists believed self-regulation to be an indicator of higher mental functioning. Research has shown that when faced with a threatening or stressful situation, a brain affected by trauma will bypass the higher functions and revert to the more primitive processes of survival, including an immediate response of fear and aggression (Arnsten, 2009; Kinnucan & Kuebli, 2013). Consistent with those perspectives, the means of interaction, such as with language, are central developmental mechanisms and not only

representations of development (Daiute, 2017). This theory supports the methods of the current study which incorporates the cultural tool of text messaging within narrative activities to assess adolescent self-regulation skill. Narrating is a cultural tool for mediating socio-historical relations (Daiute, 2014) and therefore a mechanism in the process of adolescent self-regulation, as narratives simulate daily activities and situations that call for use of self-regulation strategies. Therefore, the narrative approach used in this research differs from the typical approaches used to improving self-regulation, such as teaching general strategies to passive recipients. This approach allows participants to engage with and work through conflict situations that do not represent one universal situation, but specific situations across contexts and social relationships (Daiute, 2014).

Previous research using a narrative measure found that adolescents living in high-risk settings self-regulated differently in different contexts and when taking on various narrating perspective roles related to the context (Conover and Daiute, 2017). The findings of this study provide evidence against the trait-based idea of self-regulation which ignores the adaptive nature of the skill. Therefore, an understanding of the development and process of self-regulation during adolescence, especially for those living in high-risk settings, is of importance to support adolescents as they navigate this difficult developmental period and to inform adults who can act as supports to adolescents during this period. The current study considers adolescent self-regulation from multiple theoretical perspectives enacted with diverse measures while including the voices of the adolescents themselves. In addition, the current study argues that adolescents have knowledge of how to manage conflict situations and strategies to regulate their thoughts, feelings and behaviors, but do not always utilize known self-regulation strategies.

Project Aims

The current study aims to understand the complexity of adolescent self-regulation by identifying the context-sensitive process in self-regulation and the variations in self-regulation strategy use by context and relational interaction. Adolescents' uses of narrative to mediate their interactions in diverse situations and their uses of reflection to evaluate a standard self-regulation measure are employed in this study. In brief, this study will explore how adolescents make sense of self-regulation as a practice as indicated in their narrative expression, reflection on those narratives, and on their interpretations of a standard self-regulation measure. Narratives are defined as written accounts of connected events either real or imaginary (Daiute, 2014).

Because standardized measures typically rely on prior-determined categories to assess self-regulation, this study aims to determine what is added by a context-sensitive relational theory based method. In addition, self-regulation standardized measures provide scores that suggest self-regulation is an "all or nothing" skill rather than a skill that varies by context. Characterized as an important skill for life success, self-regulation plays a necessary role in all contexts and situations, including interpersonal interaction, work and school. This study aims to provide evidence for adolescents having knowledge of self-regulation strategies, but not always using them. Using narrative activities that allow for enactments of self-regulation in various situations from various perspectives, the current study intends to illuminate how conflict situations are processed by adolescents and as a result how adolescents self-regulate in these situations. This research will highlight adolescence as a unique period of socio-emotional development that is often overlooked in the literature, to support adolescents in developing positive self-regulation. As a result of the current study, a revised and holistic definition of self-regulation can be constructed.

The current study addresses the following research questions: (1) How does adolescent self-regulation in narratives of social conflicts vary by relational context (family, school, peers) and adolescents' role as a participant in the conflict? (2) How do context/role sensitive measures of self-regulation (process assessments) compare to the Adolescent Self-Regulatory Inventory, a trait-based measure, in terms of participant performances?

Because Likert-type standardized measures of self-regulation (e.g. ASRI) infer self-regulation from answers to self-regulation strategy knowledge and usage questions, the current study compares ASRI scores with mentions of self-regulation strategies and resolution strategies. Throughout the research design activities, participants are asked to respond to conflict situations which elicit mentions of self-regulation. In addition, resolution strategies, which symbolize conflict resolution, or self-regulation, were elicited within the plots of the narratives. The self-regulation strategy and resolution strategy mentions were quantified, and a correlation was run to determine a relationship between ASRI score and total number self-regulation and resolution strategy mentions.

CHAPTER 2: RESEARCH METHODS TOWARD A COMPLEX UNDERSTANDING OF ADOLESCENT SELF-REGULATION

Research Design

This research uses a mixed-methods exploratory study design to address the study research questions. Narrative activities and a standardized measure of adolescent self-regulation were used to elicit adolescents' self-regulation strategy knowledge, self-regulation strategy use and determine if a standardized measure provides an adequate representation of self-regulation skill in adolescents.

Presented with narratives simulating real-life situations and asked to create narratives in response to the situations, adolescents work through and make meaning of these situations, identifying the differences in response across context and social relationships. In addition, engaging in narrative activities that require perspective taking provide the opportunity for youth to narrate from a fictional, or protected, position. This allows them to engage with a story not as the main character, but at a distance, and would involve less power on behalf of the participant, allowing for greater interpretation of the presented situation (Daiute, 2010).

Participants.

A purposive sampling method was used to recruit participants, ensuring rich experiences are captured in the narratives to best understand the experiences of the target population (Polkinghorne, 2005). Participants were recruited from an alternative mental health and life skills program held at seven public high schools in a major metropolitan city. Participants in the current study were recruited from one program location where the program had just begun for the year. Therefore, participants recruited for the current study were in their fourth week of the program as compared adolescents at other program locations who had been enrolled in the

program for longer periods of time. This was done to minimize any effect the program itself may have had on the study participants. This alternative mental health and life skills program is comprised of adolescents living in high-risk settings and identified by school staff as in need of academic support, mental health services and/or are experiencing difficulty in relationships with family, teachers or peers (Gopalan, Alicea, Conover, Fuss, Gardner, Pardo, & McKay, 2013). As part of the program, participants receive a one-on-one mentor who works individually with the adolescent. The option to communicate via text message outside of group and individual sessions is open to the participant. Text message communication typically includes following up on an issue that was discussed in person, check-ins between group and individual sessions, group schedule reminders and assisting the adolescent in managing a difficult situation in the moment. Text messages are evocative of context and act as narratives to be elaborated on with participants by one-on-one mentors.

Twenty-four participants between the ages of 14 and 18 years old who identified as Black, Latino or Asian were recruited. The sample population lives in low-income communities, with 85% of participants eligible for free or reduced lunch, 90% living in single-parent homes, 80% at or above the diagnostic clinical cutoff score for PTSD and a mean GPA of 70% at the start of the program. All recruited participants completed the study.

Recruitment.

At one of the programs' after school groups, during the announcements portion of the session, the principal investigator informed adolescents of the research study and handed out an informational flyer. Any participants interested in the study were given a packet of information including: study details, letter to parents, assent form and parental consent form. The adolescents were instructed to return these signed documents to their program group the

following week when the principal investigator collected them. Adolescents who returned completed assent and consent forms were given further information regarding the date, location, time, purpose and compensation of the study.

Texting Messaging as a Cultural and Clinical Tool

The current study employs text messaging, a cultural tool, to mediate the relationship between participants' mental processes and the social world. The use of text messages in the methods of the current study is supported by Cultural Historical Activity Theory as the text message activities serve as tools to organize participants' mental activity. Using these activities, participants can take on different roles as they make sense of the conflict situations presented to them (Daiute and Lucic, 2010; Lucic, 2016). Text messaging has become a tool used for intervention by clinicians as they attempt to provide therapeutic intervention in non-traditional ways to meet their client's individual needs in a way that reflects clients' methods of communication.

Teletherapy has become an effective alternative to face-to-face psychotherapy and appealing to clients, especially adolescent clients (O'Reilly, Bishop, Maddox, Huchinson, Fisman & Takhar, 2007; Boydell, Hodgins, Pignatiello, Teshima, Edwards & Willis, 2014). While research on teletherapy refers to therapy conducted via the internet, it can be argued that it is similar to therapy via text message. Both mediums remove the face-to-face interaction between therapist and client and allow a sense of perceived distance. According to Woolford, Blake and Clark (2013), adolescents may be more willing and comfortable to share personal and sensitive feelings via this medium as opposed to speaking directly with someone. In their review of the literature, Boydell, et al. (2014) found that adolescents prefer an alternative to traditional therapy because of the sense of engagement it affords and the perceived distance between the

adolescent and the therapist. In addition, the literature review found that communicating with a therapist via the internet allows adolescents to feel more open and confident and prefer this type of service delivery format. Because the mental health and life skills program from which participants were recruited uses text messaging with participants and because of the research supporting the use of text messaging in therapeutic interventions with adolescents, the current study design includes imaginative text messaging activities.

Measures

Data was collected from two narrative activities and the Adolescent Self-Regulatory Inventory (ASRI; Moilanen, 2007) on the first visit, and a reflective activity conducted on the second visit (see Table A1). Half of the participants were randomly assigned to complete Activities 1 and 2 followed by the ASRI and half were randomly assigned to complete the ASRI followed by Activities 1 and 2. This was to ensure that the questions asked on the ASRI did not influence responses given in the narrative activities.

Part I: Narrative activities.

Activity 1: Participant activity

Because participants were recruited from a program in which they typically communicate with their one-on-one mentor via text message, the first narrative activity consisted of three example text messages presented to participants. Each text message described a conflict situation in a different context, one with a peer, one with a family member and one with a school staff person (see Figure 1). The three text messages read, (1) "Miss, I'm so angry, I wanna hit her" (peer context); (2) "Hey, can I talk to you about my mom, she's really makin me upset" (family context); (3) "My teacher got me mad, it's not fair"(school context). The participants were directed to respond to four prompts, representing different roles, regarding each of the three

text messages: (1) "Imagine that you wrote the text message because you were in that situation.

Write a story about what could have happened to cause you to send that text message"

(self:before role) (2) "Continuing the story, what would you have done after you sent the text

message?" (self:after role) (3) "Now imagine that a younger family member had sent that text

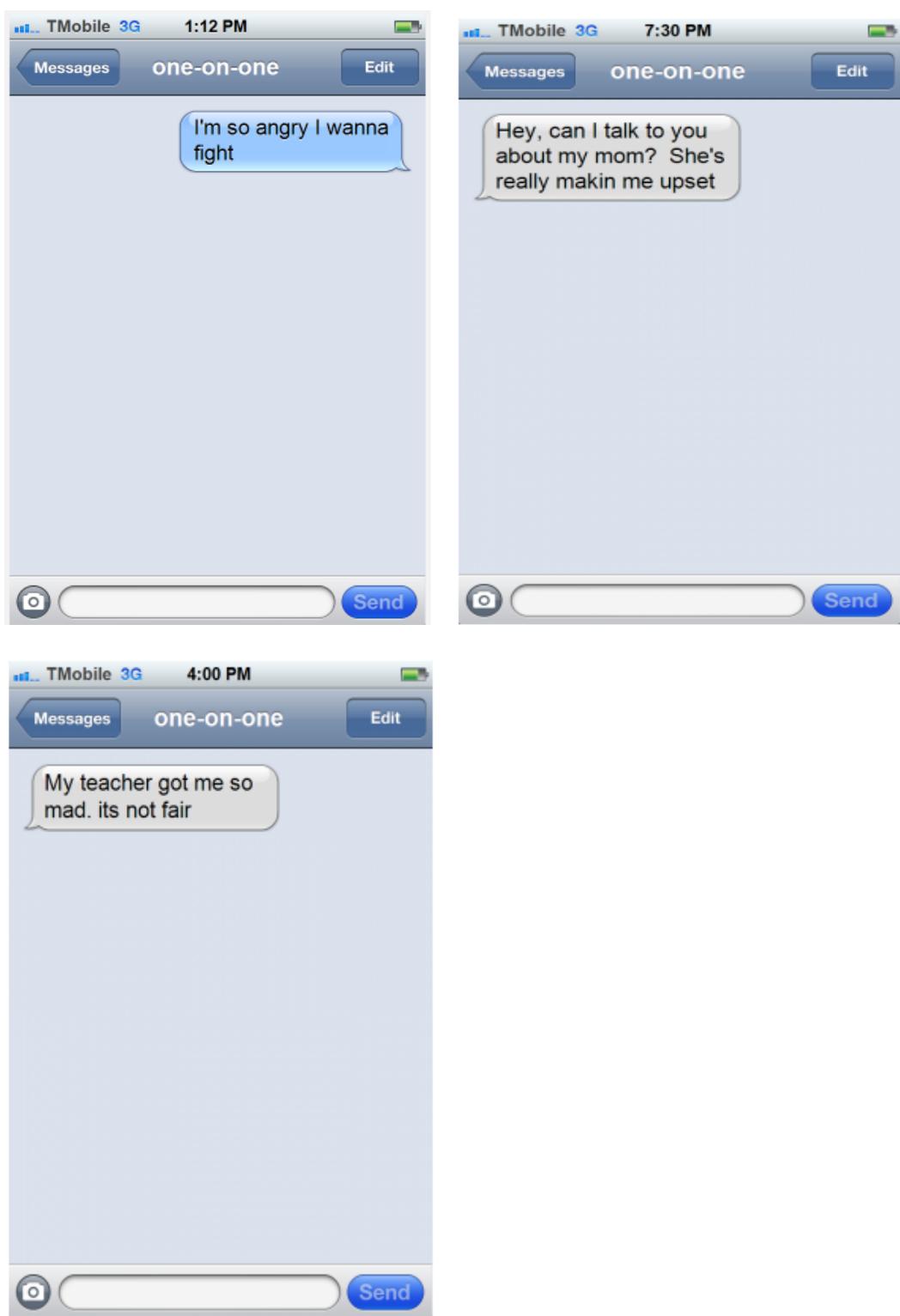
message to their one-on-one. Please write a letter giving them advice on how to handle the

situation." (advisor role) (4) "How would your one-on-one tell you to handle the situation?"

(advisee role).

Figure 1. Example text messages shown participants representing Peer, Family and School

Context



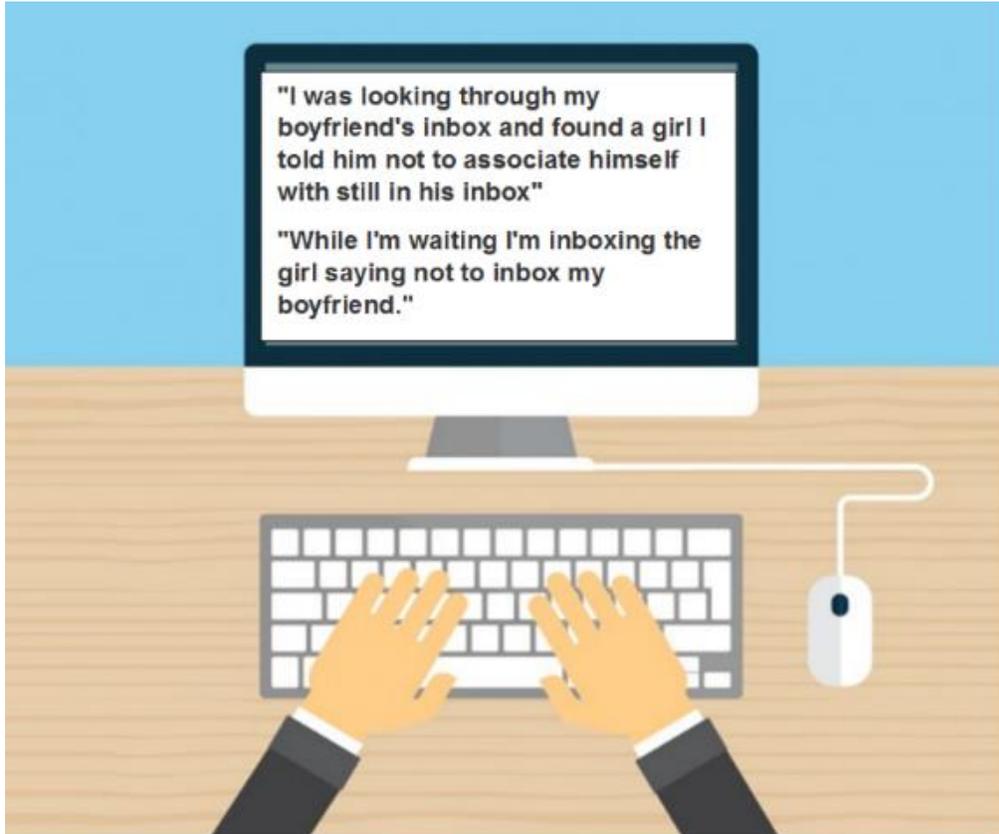
Activity 2: Positioning as Another Activity

Participants were presented with each of the three example text messages from the previous activity. Because this study is partially a continuation of a previous study (Conover and Daiute, 2017), previous participant narratives from the As Self: After Texting role were presented to current participants. This activity allowed the participants to take a step back, removed from the direct conflict, and take on a fourth role of giving advice to a stranger about a conflict in which the participant is not directly related.

Peer context

After participants were shown the peer context text message (see Figure 2), they were given the following directions: (1) “Student #1 was asked the following: ‘Imagine that you wrote that text message because you were in that situation. Write a story about what could have happened that would cause you to send the text message.’ (2) Student #1 answered: ‘I was looking through my boyfriend’s inbox and found a girl I told him not to associate himself with still in his inbox.’ (3) Student #1 was then asked the following: ‘Continuing the story, what would you have done after you sent the text message?’ (4) Student #1 replied, “while I’m waiting I’m inboxing the girl saying not to inbox my boyfriend.” (5) Do you think the person that wrote those answers handled this situation in the best way? (6) What would you have done differently in this situation?’”

Figure 2. *Previous participant Peer context text message responses*



School Context

After participants were shown the school context text message (see Figure 3), they were given the following directions: (1) "Student #1 was asked the following: 'Imagine that you wrote that text message because you were in that situation. Write a story about what could have happened that would cause you to send the text message.'" (2) "Student #1 answered: "'I was at class taking a test. One of my friends asked me for help with a problem. I couldn't tell her the answer so I said think about our notes from class. The teacher glanced at us and assumed that both of us were cheating. She failed me.'" (3)" Student #1 was then asked the following: 'Continuing the story, what would you have done after you sent the text message?'" (4) Student #1 replied, "'I'm frustrated and not doing any of the teachers work'" (5) Do you think the

person that wrote those answers handled this situation in the best way? (6) What would you have done differently in this situation?”

Figure 3. *Previous participant School context text message responses shown to participant*



Family Context

After participants were shown the family context text message (see Figure 4), they were given the following directions: (1) “Student #1 was asked the following: ‘Imagine that you wrote that text message because you were in that situation. Write a story about what could have happened that would cause you to send the text message.’ (2) Student #1 answered, "my mom was accusing me of something i didnt do" (3) Student #1 was then asked the following: ‘Continuing the story, what would you have done after you sent the text message?’ (4) Student #1 replied, "i

am talking to my mom but soon i would give up" (5) Do you think the person that wrote those answers handled this situation in the best way? (6) What would you have done differently in this situation?"

Figure 4. *Previous participant Family context text message responses shown to participant*



The presented text messages were shown via computer and responses were typed by each participant. The purpose of using computers is that this is typically the way adolescents communicate with each other (i.e., Facebook or email) and are therefore comfortable both using computers and sharing information in this way. Also, they may be more willing and feel more comfortable to share personal information and sensitive feelings via this medium as opposed to speaking directly with someone (Woolford, Blake & Clark, 2013).

This activity is supported by social-cognitive and cultural historical theories. The narrative activities used in this study allow for examination of a process of self-regulation and

variation in self-regulation by author role and context. Social-cognitive Theory suggests that self-regulation is not one internal state, but a process influenced by the environment. Cultural Historical Activity Theory proposes that cognitive development is influenced by children engaging in meaningful activities, including those that allow them to take on different roles, in relation to different audiences, enacting cultural norms flexibly to make sense of their experiences. Therefore, through the use of these different activities, participants had the opportunity to reflect on self-regulation and make sense of the conflict situations they are processing as they take on different roles, and in the use of different kinds of self-regulation strategies.

Part II: Standardized Measure

Participants completed a standardized measure of adolescent self-regulation, the Adolescent Self-Regulatory Inventory (Moilanen, 2007) (see Figure A1). The Adolescent Self-Regulatory Inventory (ASRI; Moilanen, 2007) is a 36 item measure assessing short-term and long-term self-regulation of adolescents. Questions from the short-term self-regulation portion include, “I can calm myself down when I’m excited or all wound up” and “I lose control whenever I don’t get my way” and questions from the long-term self-regulation portion include, “I can find a way to stick with my plans and goals, even when it’s tough” and “If something isn’t going according to my plans, I change my actions to try and reach my goal.” Responses range from 1 (*not at all true for me*) to 5 (*really true for me*) on a 5-point Likert scale. To obtain a score, the responses were totaled with a higher score indicating greater ability to self-regulate.

Part III: Reflective Activity

Activity 4: Reflective Activity

The narratives were analyzed and the ASRI was scored before conducting the Reflective Activity. The purpose of this activity was to provide an abstract expressive medium for the participants to interpret the analyzed narratives. The Reflective Activity, focusing on the questions between the narratives, allows the participants to be the experts of their own experiences (see Appendix). This activity can also provide information that may not be interpreted from the narrative activities such as the nuances associated with self-regulation in context. The Reflective Activity was conducted approximately 2 months after Part 1. The PI conducted this activity with each participant over the course of two weeks.

The Reflective Activity began with an introduction, including a review of the narrative activities and ASRI participants previously completed and the definition of self-regulation and self-regulation strategies for clarity and context. For half of the participants, the activity began with questions about their thoughts on their ASRI score. Half of participants were told their score from the beginning and half were told their score after being asked what they thought their score was in the given range. Once informed of their score, questions focused on participants' beliefs about the accuracy of measure and what they think their score should be and why. The other half of participants began the activity by answering questions about their responses to the narrative activities. More specifically, this portion of the activity included questions related to the diverse self-regulation strategies used in varied contexts and role perspectives.

Data Analysis

Data analysis was completed in three parts to analyze the two narrative activities, Adolescent Self-Regulatory Inventory and Reflective Activity (see Table 1).

Part I: Self-regulation in the narratives.

To analyze the collected narratives, Plot Analysis, or identification of plot elements to find meaning in the narratives, was useful for understanding the narrator's perspective of the experience and the process of their reaction to the conflict situations (Daiute, 2014). *Plot elements* include *setting*, *initiating action*, *complicating action*, *turning point*, and *ending or resolution strategy*. Because narrators use plots to provide a relation between events and perception of these events within the social environment, plot analysis is a relevant way to analyze the narratives of the current study to get to the implicit meaning of the narrative. Plots allow the narrator to relate to others, create a framework for the events that they experience and make sense of their experiences. The way the plot elements are organized within the structure of a narrative can tell us how a conflict situation is understood and processed. Plot analysis also allows for identification of emerging themes of plot elements and *psychological states* within and across the narratives. Capturing the contextual and relational differences in the narratives can demonstrate that adolescents are aware of self-regulation strategies and that they know how to use them, but that adolescents do not always exhibit these strategies. This will challenge the "all or nothing" approach to researching self-regulation, that is generally used when discussing self-regulation ability.

The inductive approach of Plot Analysis was used to identify the structure of the narratives by the plot elements to reveal how the story is processed. First, the narrative was read and the beginning, middle and end sections identified. Then the plot elements of setting, characters, initiating and complicating actions, turning point, resolution strategies and ending were identified. In addition, the *psychological states affect*, *cognition*, and reported speech were identified allowing for a greater understanding of the meaningful experiences within the events

described in the narrative. For the purposes of this research, *affect* is being defined as feeling or expressing emotion and *cognition* is being defined as processes of remembering, reflecting, knowing and recalling. These *psychological states* provide indications of how one processes a conflict experience, whether it be heavily cognitive, affective or an equal amount of both. Also, where the *psychological states* appear in the narrative speaks to which contexts are more salient, or which parts of the event are processed with more emotion or thought (Daiute, 2014). Top-down coding was used to identify self-regulation strategies mentioned within the narratives. This was to determine if there is a relationship between type of strategies used within and across roles and contexts. Each plot element and psychological state was entered into *Atlas.ti* as an individual code along with the code of “self-regulation strategy” which were used for each of the 360 narratives. Patterns among the *psychological states* and self-regulation strategies were identified within and across contexts, roles and plot elements. In addition, patterns of plot elements were identified across contexts and roles.

The numbers of plot elements and *psychological states* used for each participant in each context and genre were entered into SPSS. A series of chi-square and Analysis of Variance statistical tests were run to determine if the differences in number of plot elements and *psychological states* used across the contexts and genres were statistically significant.

Part II: Self-regulation as captured by the standardized measure

The Adolescent Self-Regulatory Inventory (Moilanen, 2007) was scored by totaling the items. Scores were used to determine if there is a relationship between ASRI score and number of self-regulation strategies and *resolution strategies* mentioned in the narratives.

Part III: Reflective Activity Analysis

Character mapping analysis, or the identification of character categories, psychological states, and actions, was used to examine the meaning behind the use of self-regulation strategies (Daiute, 2014). This form of analysis was used to highlight the complexity and context-sensitivity of adolescent self-regulation. Character categories include character mentions (e.g. “I” “He/she” “my teacher”) while *psychological states* include *affect*, *cognition* and reported speech. Actions include instances of events within the narrative and valence includes the positive or negative nature of the *affect*, *cognition* and actions within the narrative. This approach allows for confirmation of *why* participants used specific self-regulation strategies in their narratives and highlight the nuances (e.g. contextual differences, interpersonal relationships) involved and considered in adolescent self-regulation. The process involved: (1) Transcription and familiarity with the reflective activity response; (2) Identification of character element categories: character categories (e.g. mother, friend), *psychological states* (e.g. *cognition*, *affect*) and actions (3) Identification of patterns of character elements across and within context and genre (4) Linking together the patterns and relationships among the categories. The PI and a research assistant coded the responses. Inter-rater reliability was tested between the two coders (Kappa = .79).

Self-regulation compared between narratives and ASRI.

An ANOVA was used to determine if there is a relationship between number of self-regulation strategies mentioned in the narratives and score on Adolescent Self-Regulatory Inventory. Standardized measures of self-regulation have been used to illustrate the self-regulation capabilities of different populations, including adolescents living in high-risk settings. Scores on these standardized measures have been used as evidence of a population having little

knowledge of self-regulation strategies and thus, poor self-regulation. The findings of the current study can provide evidence for self-regulation being complex and that a high knowledge of strategies can negatively correlate with a low score on a standardized measure of adolescent self-regulation. In addition, an ANOVA was used to determine if there was a statistically significant relationship between the number of character categories and participants' scores on the ASRI.

Table 1. Research Design Chart

Research Question	Instruments	Data	Data Analyses	Results
<p>(1) How does adolescent self-regulation in narratives of social conflicts vary by relational context (family, school, peer) and adolescents' role as a participant in the conflict?</p> <p>Subquestion: How does adolescent self-regulation vary by author role in a conflict situation?</p>	<p>Narrative Activities Participant Activity</p> <p>Positioning As Another Activity</p> <p>Figures 1-4</p>	<p>Narratives written by participants in response to narrative activity prompts</p> <p>Number of Plot element and self-regulation strategy mentions</p> <p>Figure A1 Tables 4, 6-8, 11.</p>	<p>Plot Analysis</p> <p>ANOVA</p> <p>Tukey's HSD Post Hoc Comparison</p>	<p>A statistically significant difference was found in the number of <i>complicating actions</i> used across the five role categories ($F(4, 115) = 2.821, p=.028$), specifically between <i>complicating actions</i> used in the As Self: Before Texting and the Positioning As Another groups.</p> <p>A statistically significant difference was found on the number of <i>resolution strategies</i> used across the give role categories ($F(4, 115) = 14.206, p=.000$), specifically between <i>resolution strategies</i> used in the As Self: Before Texting group and all of the other role groups. There was also a significant difference between the means of <i>resolution strategies</i> in the As Youth Advisor to Younger Relative and As Positioning as Another narrative role groups as well as the Receiving Advice from a Mentor and Positioning as Other groups.</p> <p>A statistically significant difference was found in the number of <i>affect</i> mentions ($F(4, 115) = 3.405, p=.011$) and cognitive mentions ($F(4, 115) = 3.037, p=.020$) mentions across the five role stances.</p> <p>The type of Self-Regulation strategy used varied significantly by the role from which the participant narrated ($F(4, 611) = 12.882, p=.000$).</p>
<p>(1) How does adolescent self-regulation in narratives of social conflicts</p>	<p>Narrative Activities Participant Activity</p> <p>Positioning as Another Activity</p>	<p>Narratives written by participants in response to narrative</p>	<p>Plot Analysis</p> <p>ANOVA</p>	<p>A statistically significant difference in the means of <i>complicating actions</i> by context ($F(2, 69) = 3.768, p=.028$),</p>

<p>vary by relational context (family, school, peer) and adolescents' role as a participant in the conflict?</p> <p>Subquestion: How does adolescent self-regulation vary by context in a conflict situation?</p>	<p>Figures 1-4</p>	<p>activity prompts</p> <p>Number of Plot element and self-regulation strategy mentions</p> <p>Figures A1 Tables 1-5, 10.</p>	<p>Tukey's HSD Post Hoc Comparison</p>	<p>specifically between the Peer and School contexts.</p> <p>A statistically significant difference was found in the means of <i>affect</i> mentions by context ($F(2, 69)= 3.922$, $p=.024$), specifically in the Family and School contexts.</p> <p>A statistically significant difference was found in the means of <i>cognition</i> mentions by context ($F(2, 69)=3.177$, $p=.048$), specifically in the Family and School contexts.</p> <p>A statistically significant difference was found in the type of Self-Regulation strategy used by context ($F(4, 611)= 12.882$, $p=.000$).</p>
<p>How do context/role sensitive measures of self-regulation (process assessments) compare to the Adolescent Self-Regulatory Inventory, a trait-based measure, in terms of participant performances?</p>	<p>ASRI</p> <p>Reflective Activity</p>	<p>ASRI scores</p> <p>Reflective Activity transcripts</p> <p>Figure A1 Appendix</p> <p>Tables 12-15</p>	<p>Descriptives</p> <p>Correlation</p> <p>Character Analysis</p>	<p>Participants' ASRI scores ranged from 88 to 157 with a mean of 122.29. Scores were normally distributed.</p> <p>There was no significant correlation found between ASRI score and number of self-regulation strategies or <i>resolution strategies</i>.</p> <p>A greater percentage of <i>affect</i> and <i>cognition</i> mentions were used in the reflective activity questions related to context.</p> <p>Family members were mentioned 16% more, Pronouns were used 4% more and General Nouns were used 6% more in responses to the context related questions than the role related responses.</p> <p>School staff characters were mentioned 10% more in participants' responses to the role related questions than the context related questions.</p>

CHAPTER 3: CONFLICTS ARE EXPERIENCED AND PROCESSED DIFFERENTLY BY ADOLESCENTS IMAGINING THEMSELVES IN DIFFERENT ROLES AND CONTEXTS

To determine if adolescent self-regulation varies by author role in a narrated conflict situation, the current study used activities that asked participants to narrate their managing of conflict situations in different contexts and from different author roles. Roles included participants' responding to a conflict situation, how they would suggest a younger relative respond and how they imagine their mentor would suggest responding. These different roles allow participants to take varied stances in relation to the conflict situation as they identify conflict resolution strategies, expressing self-regulation. Roles relatable to adolescents, and specifically participants in the current study, were created to illustrate the variation in self-regulation or approaches to conflict situations when taking on different positions in a conflict. The roles of Self, Youth Advisor to a Younger Relative and Recipient of Advice from a Mentor are familiar and commonly adopted by study participants, as both adolescents and as participants of a life skills program. Taking on different author roles allows for participants to speak to different audiences, thereby enacting a relational flexibility, an indication that participants are taking others into account as they determine how to self-regulate and resolve a conflict situation. In this study, experiencing conflict is defined by the plot elements of complicating actions, or conflict escalation and resolution strategies, or conflict resolution. Processing conflict is defined by the *psychological states of affect and cognition* expressed in the narratives.

Narrative analysis involved identifying plot elements and *psychological states* found in the participant narratives. Qualitative findings were quantified, providing data points for quantitative analyses that were used to support the findings of the narrative analysis. Results of

the narrative analysis showed differences in participants' experiencing and processing conflict situations when narrating from different role perspectives. In this chapter, results will be presented by subgroups created to provide a comprehensive investigation of the main research question, "How does adolescent self-regulation vary by the adolescents' role in a narrated conflict situation." Results of the narrative analyses including conflict escalation and resolution strategies will be presented followed by findings of how participants processed and reported experiencing a conflict situation.

Conflict Escalation and Resolution Vary by Author Role in Narrated Conflicts

A main research question of the current study inquired how adolescent self-regulation varies by author role in a conflict situation. This study also explored how participants experience and process the conflict situations themselves. The current study investigated the differences in how participants experienced and processed conflict situations when they are approaching the situation in the different roles of: As Self: Before Texting, As Self: After Texting, As Recipient of Advice from Mentor As Youth Advisor to a Younger Relative, and As Positioning as Another. How participants experience and process conflict situations from different author roles can speak to why they may self-regulate differently.

Plot Analysis identified plot elements and *psychological states* used by the participants in different author roles, illustrating the adolescents' understanding of conflict situations as experienced from different perspectives. The results of the Plot Analysis, supported by a One-way ANOVA, show that escalation ($F(4,115)=2.821, p=.028$) and resolution of conflict ($F(4,115)=14.206, p=.000$) vary significantly when participants narrated from the perspective of different roles in addressing a conflict. Post hoc analysis were used to examine all possible pairwise comparisons as this test provides an accurate differentiation across groups. Results of

the post hoc analyses showed a significant difference in the number of *complicating actions*, or escalations of conflict, found in the narratives written As Self: Before Texting and As Positioning as Another. Post hoc comparisons of *resolution strategies*, or conflict resolutions, and author role found significant differences between the As Self: Before Texting and all other role perspectives and between the As Self: Before Texting and As Positioning as Another roles. Conflict escalation is illustrated in the *complicating actions* of the narratives while conflict resolution is illustrated in the *resolution strategies*. As illustrated in in Table 2, the greatest percentage of *complicating actions* occurred in the As Self: Before Texting and As Youth Advisor to a Younger Relative narratives, which shows that when participants positioned themselves in a conflict situation or positioned themselves as experts, more escalation of the conflict was experienced than when narrating from the other roles. The relatively low percentage of *complicating actions* in the As Positioning as Another role compared to the As Youth Advisor to Younger Relative role suggests that participants felt the need to emphasize how conflicts escalate when they are processing conflict from a proactive mentoring stance rather than a removed, reactive stance.

As also shown in Table 2, the percentage of *complicating actions* to *resolution strategies* in the As Self: Before Texting narratives suggests that processing conflict from the position of the self consists of much more escalation than resolution. Therefore, when processing conflict from the position of the self as first person, one tends to be more fixated on the actual conflict and the escalation of that conflict rather than finding strategies to resolve the conflict. Complicating actions capture events, or how the conflict develops, and according to the results, occurs relatively often in the As Self: Before Texting role, as does affective language, and less comparatively in resolution sections of narratives where *cognition* dominates. When positioning

themselves as giving advice to a young relative, participants focus more on narrating the escalation of the conflict than resolving the conflict. The emphasis on conflict escalation rather than conflict resolution is evidenced by a greater proportion of *complicating actions* to *resolution strategies* in the As Youth Advisor to Younger Relative narratives (see Table 2). When taking the role of giving advice to a younger relative, participants may be more focused on the conflict affecting their younger sibling than providing guidance to resolve the conflict. The As Recipient of Advice from Mentor role was the only group of narratives that contained more *resolution strategies* than *complicating actions*, possibly indicating that when narrating the advice they would receive from their one-on-one mentor, participants emphasize resolutions more than escalations.

Table 2

Number and Percentage of Plot element and Psychological state categories in each Narrating Role

	As Self: Before Texting		As Self: After Texting		As Recipient of Advice from Mentor		As Youth Advisor to Younger Relative		As Positioning as Another	
	<i>n</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>n</i>	<i>%</i>
<i>Plot Elements</i>										
Initiating Action	72	36.5	73	40.0	73	40.8	73	34.2	73	47.4
Complicating Action	111	56.3	57	31.1	51	28.5	85	40.0	45	29.2
Resolution Strategy	14	7.2	53	28.9	55	30.7	55	25.8	36	23.4
Total	197	100	183	100	179	100	213	100	154	100
<i>Psychological States</i>										
Affect	66	77.6	58	65.9	48	42.1	52	36.9	17	32.7
Cognition	5	5.9	16	18.2	20	17.5	19	13.5	6	11.5
Reported Speech	14	16.5	14	15.9	46	40.3	70	49.6	29	55.8
Total	85	100	88	100	114	100	141	100	52	100
<i>Characters</i>	<i>n</i>	574		406		411		435		413
	<i>%</i>	25.6		18.2		18.4		19.4		18.4

The greatest percentage of *resolution strategies* was mentioned in the As Recipient of Advice from Mentor and As Youth Advisor to Younger Relative roles (see Table 2). The same number of self-regulation strategies was mentioned in both these roles, possibility indicating that participants have internalized the conflict resolution advice their mentor has given them and are mirroring that advice in the advice that they are giving a younger relative. Examples of *complicating actions* and *resolution strategies* used in each role are included in Table 3. Each set of *complicating actions* and *resolution strategies* were from the same participant. The number of *turning points* varied because some narratives only consisted of one action, the *initiating action*.

Table 3

Examples of Complicating Actions and Resolution Strategies in Each Role Category

Role	Participant Example		Participant Example	
	<i>Complicating Action</i>	<i>Resolution Strategy</i>	<i>Complicating Action</i>	<i>Resolution Strategy</i>
As Self: Before Texting	<i>“I most likely would get upset over something little”</i>	<i>“not be able to control myself”</i>	<i>“so then I would be very angry”</i>	<i>“tell them I am angry”</i>
As Self: After Texting	<i>“I feel so frustrated”</i>	<i>“I have no idea how to handle it”</i>	<i>“try to annoy them since they annoyed me”</i>	<i>“not face my mom until I feel like it”</i>
As Youth Advisor to Younger Relative	<i>“see if it’s actually a mistake or something that he missed”</i>	<i>“understand why he got the grade that he did”</i>	<i>“by screaming into a pillow”</i>	<i>“think of positive thoughts”</i>
As Recipient of Advice from Mentor	<i>“and we could talk”</i>	<i>“try to manage things in a peaceful way without violence”</i>	<i>“maybe a person is bothering you”</i>	<i>“you should address the person who is causing this”</i>
As Positioning as Another	<i>“showed her that I have no reason to cheat”</i>	<i>“tell her that I was not cheating at all”</i>	<i>“after annoying my mom for a little”</i>	<i>“I would find evidence to prove my innocence of her accusations”</i>

Adolescent's processing of conflict varies by author role.

In order to examine how adolescent self-regulation varies by adolescents' role in narrating a conflict situation, Plot analysis was used and a One-way ANOVA was conducted. Results of the Plot Analysis, supported by One-way ANOVA, show a significant difference in the number of *affect* ($F(4,115)=3.405, p=.011$) and *cognition* ($F(4,115)=3.037, p=.020$) mentions across the narratives written by different author roles. Mentions of *affect* signify emotion enacted within the narratives while mentions of *cognition* demonstrate moments of thought or understanding. Examples of *affect* and *cognition* mentions in each role are illustrated in Table 4. Together, these two *psychological states* illustrate the use of emotion or *cognition* processing a conflict. More specifically, post hoc analysis found a significant difference between the number of *affect* mentions in the As Self: Before Texting and both the As Self: After Texting and As Positioning as Another author roles. In addition, a significant difference was found between the number of *cognition* mentions in the As Self: Before Texting and both the As Youth Advisor to Young Relative and As Recipient of Advice from Mentor author roles. In addition, a significant difference in *cognition* mentions was found in the As Positioning as Another and both the As Youth Advisor to Younger Relative and As Recipient of Advice from Mentor author roles. The *psychological states* identified in the Plot Analysis show that participants oriented with affective state expressions more than with cognitive state expressions when addressing conflict in all role stances. However, the greatest difference between number of *affect* and *cognition* mentions was in the As Self: Before Texting and As Self: After Texting role narratives indicating that participants process conflict with greater emotion when positioning as themselves as opposed to taking on the role of another. The largest percentage of *affect* and the smallest percentage of *cognition* were mentioned in the As Self: Before Texting narratives. This speaks to participants'

feelings of emotion in initially processing a conflict situation and lack of *cognition* during this initial process. The least amount of *affect* was mentioned in the As Positioning as Another role narratives, possibly indicating that conflicts are less emotional when one is distanced from playing a role in the actual conflict. Both narrative activities were completed in the same session so the invitations to narrate from different roles obviously served to elicit different considerations and evaluations of the conflict situations than when re-constructing another's responses to the conflict situations.

Cognition mentions were the most frequently used in the As Recipient of Advice from Mentor role narratives and least in the As Self: Before Texting narratives, which could signify that participants know they will receive advice that contains more cognitive self-regulation strategies but that they themselves do not use much cognitive self-regulation strategies when processing conflict. Reported Speech was used the most in the As Youth Advisor to Younger Relative narratives and the least in the Before and As Self: After Texting narratives. The As Self: Before Texting and As Self: After Texting narratives are written from the position of first person so it makes sense that there would be less Reported Speech, however this could also indicate that participants are not processing the conflict situation by reporting what others would suggest or tell them to do, but by narrating what they themselves would do.

Table 4

Examples of Psychological States in Each Role Category

Role	Affect		Cognition	
As Self: Before Texting	<i>“got me mad”</i>	<i>“I got angry”</i>	<i>“thinking that I was being selfish”</i>	<i>“really don’t understand each other”</i>
As Self: After Texting	<i>“calm myself down”</i>	<i>“I would have cried”</i>	<i>“think about what I just sent”</i>	<i>“tried to figure out what I did wrong”</i>
As Youth Advisor to Younger Relative	<i>“you need to keep your head cool”</i>	<i>“and just cool down”</i>	<i>“think before you act”</i>	<i>“understand that maybe it’s what’s best”</i>
As Recipient of Advice from Mentor	<i>“talk to him calmly”</i>	<i>“it’s ok to be angry”</i>	<i>“they don’t know what to do in the situation”</i>	<i>“be thoughtful of your actions”</i>
As Positioning as Another	<i>“and I won’t have to be angry with him”</i>	<i>“I would wait until my mom calm down”</i>	<i>“see if she would understand”</i>	<i>“make her understand”</i>

Psychological states change as conflict is experienced via the diverse author roles.

Initiating actions, or beginning of the conflict, found in the narratives are moderately affective followed by heavily affective actions as the conflict escalates in the *complicating actions*. As the conflict is processed, it becomes less affective through the *turning point* and *resolution strategy* or *ending*. On the other hand, uses of cognitive states were relatively less prominent in the *initiating actions* and became more prominent as conflict was processed through the *complicating actions* and Turning points toward the *resolution strategies*. The greatest amount of *affect* was reported in the *complicating actions*, which reflects that these *complicating actions* represent escalation in conflict. *Resolution strategies* have more than twice the amount of affective mentions than cognitive mentions, indicating that while *cognition* may increase as one processes a conflict situation, the resolution is still much more an emotion-driven action.

Reported speech was used the most frequently in the *initiating actions* followed by the *complicating actions*. These findings could be a result of participants describing the involvement of another in the beginning and through the escalation of the conflict, but not as frequently reporting the involvement of another in the remainder of the narrative (see Table 5).

Table 5

Psychological states used in each Plot Element

<i>Plot Element</i>	Affect		Cognition		Reported Speech	
	<i>N</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>N</i>	<i>%</i>
Initiating Action	66	25.8	14	19.5	41	34.7
Complicating Action	82	32.0	15	20.8	35	29.7
Turning Point	51	19.9	16	22.2	15	12.7
Resolution Strategy	43	16.8	21	29.2	20	17.0
Ending	14	5.5	6	8.3	7	5.9
Total	256	100	72	100	118	100

Different sets of characters are used when narrating from each author role perspective.

Narratives written from each role perspective included different sets of characters highlighted by participants as they engaged with the conflict situations as actors taking on different roles. The As Self: Before Texting narratives contained the greatest number of character mentions while the As Self: After Texting narratives contained the least amount of character mentions. Overall, participants mentioned themselves more than any other character. This could be because participants set up the conflict in the As Self: Before Texting narratives and rather than focus on the characters in the conflict, used the As Self: After Texting narratives to discuss conflict resolution. Interestingly, the character of “mom” was mentioned the most in the As Self: Before Texting narratives possibly indicating that for participants, their mother is a source of conflict or plays a role in their conflict. In the As Youth Advisor to Younger Relative role narratives, participants used the character “you/your/yourself” more than any other role. This suggests that when positioning themselves in the role of a mentor, they are suggesting how a younger relative should manage themselves in a conflict by creating a script for them or giving specific direction of what they should do (see Table 6). A chi-square analysis was not run for the main character groupings due to the low sample size.

Table 6

Number of Character Mentions in Narratives by Role

	As Self: Before Texting	As Self: After Texting	As Recipient of Advice from Mentor	As Youth Advisor to Younger Relative	As Positioning as Another
Self	361	177	213	108	191
Peer	17	14	1	2	21
boyfriend	1	2	0	0	17
ex-boyfriend	0	1	0	0	0
friend(s)	15	11	1	1	3
classmate	1	0	0	0	0
student(s)	0	0	0	1	1
Family Member	32	20	17	25	17
brother	2	3	0	0	0
Dad	0	0	1	0	0
family	2	1	0	2	0
sibling(s)	1	0	0	11	0
sister	0	1	0	0	0
mom	25	14	15	12	15
parents	2	1	1	0	2
School Staff	25	18	40	22	27
counselor	0	1	1	0	2
one-on-one	2	4	23	2	0
principal	0	0	0	2	0
teacher(s)	23	13	16	18	25
Unspecified Other	94	82	156	282	155
adult	0	0	1	0	0
boy(s)	2	0	0	0	1
coworkers	1	0	0	0	0
female	0	1	0	0	0
girl(s)	3	0	0	0	17
guy(s)	0	0	0	1	2
he/him/his	2	5	9	19	28
her/she	16	38	61	33	56
Kid	3	0	0	0	0
person/people	10	12	10	14	7
someone	19	6	1	5	1
their/them/they	29	19	30	98	19
We	2	1	5	10	5
you/yourself	7	0	39	102	19
Total	529	311	427	439	411

How Does Experiencing and Processing Conflict Vary by Role?

The data indicate that participants imagined experiencing conflict differently depending on the role from which they were narrating. The escalation and resolution of a conflict were discussed differently across roles. The As Self: Before Texting and As Youth Advisor to Younger Relative narratives both contained the greatest number of *complicating actions* as compared to the other role narratives. In addition, the number of *complicating actions* used in these narratives was greater than the number of *resolution strategies* used indicating more escalation of conflict within these roles than the others. When participants took on the role of Receiving Advice from a Mentor, they mentioned more *resolution strategies* than *complicating actions* suggesting that their mentors support them in identifying ways to resolve conflict rather than on the escalation of the conflict. Processing conflict varied by role as well. Overall there was more *affect* than *cognition* mentioned in each of the role narratives with the biggest difference between the two *psychological states* occurring in the As Self: Before Texting and As Self: After Texting narratives. The types characters identified varied when participants imagined experiencing and processing conflict by different roles. Participants mentioned themselves more than any other character in each role but identified different characters when imagining themselves experiencing conflict from different roles.

CHAPTER 4: EXPERIENCING AND PROCESSING CONFLICT VARIES BY CONTEXT

The current study explored the differences in how participants experience and process conflict situations differently when they are narrating conflict occurring in different contexts. The current study defines experiencing conflict by the plot elements used by participants as they narrate conflict within different contexts. Processing conflict is defined by the *psychological states of affect and cognition* expressed by participants. Findings suggest that context is a factor of consideration when adolescents are deciding which self-regulation strategies will be most useful in a conflict situation. In addition, conflict escalation and resolution were found to vary by context as was how participants processed conflict situations. Exploring how participants experience and process conflict situations in different contexts can provide evidence for self-regulation being a skill interacting with the specific situation, purpose, and relevant others.

Conflict Escalation and Resolution Vary by Context of Narrated Conflicts

Plot Analysis allows for identification of the plot elements and *psychological states* used in different Contexts, illustrating the experience and processing of a conflict situation within different environments. The results of the Plot Analysis show that escalation and resolution of conflict vary by the context in which the conflict is occurring. Conflict escalation is illustrated in the *complicating actions* of the narratives while conflict resolution is illustrated in the *resolution strategies*.

The greatest percentage of *complicating actions* occurred in the Peer context narratives, which could indicate that more escalation is involved in peer related conflicts (see Table 7). In the As Positioning as Another narratives, the School context contained the greatest percentage of Complication Action, possibly meaning that when the self is removed, greater escalation is

anticipated to occur in a school conflict. A significant differences was found in the number of complicating actions used between the Peer and School contexts ($F(2, 69)= 3.768, p=.028$).

Resolution strategies were mentioned the most frequently in the Family context narratives and the greatest ratio of *complicating actions* to *resolution strategies* occurred in the School context.

This could indicate that conflict resolution is more of a goal in the Family context than in the Peer or School contexts, but that in the School context, there is a greater balance of conflict

escalation and resolution. In the As Positioning as Another narratives, the number of

complicating actions was greatest in the Other-School context as was the disparity between

complicating actions and *resolution strategies*. This further provides evidence for one imagining

more conflict escalation in a school related conflict when he or she is positioning as another

rather than as his or herself. Examples of *complicating actions* and *resolution strategies* are

included in Table 8.

Table 7

Number and Percentage of Plot Element and Psychological State Categories across Narrative Setting Contexts

<i>Plot Elements</i>	Peer		Family		School		Other-Peer		Other-Family		Other-School	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Initiating Action	98	31.5	95	36.5	98	47.8	26	53.1	23	48.9	24	41.4
Complicating Action	150	48.2	95	36.5	60	29.3	11	22.4	11	23.4	23	39.6
Resolution Strategy	63	20.3	70	27.0	47	22.9	12	24.5	13	27.7	11	19.0
Total	311	100	260	100	205	100	49	100	47	100	58	100
<i>Psychological States</i>												
Affect	96	53.0	84	56.4	44	44.4	8	36.4	7	46.7	2	13.3
Cognition	32	17.7	19	12.8	10	10.1	3	13.6	2	13.3	1	6.7
Reported Speech	53	29.3	46	30.8	45	45.5	11	50.0	6	40	12	80.0
Total	181	100	149	100	99	100	22	100	15	100	15	100
<i>Characters</i>	<i>n</i>	659	665	499	148	118	147					
	%	36.1	36.5	27.4	35.8	28.6	35.6					

Table 8

Examples of Complicating Actions and Resolution Strategies in Each Expressive Context

	Participant Example		Participant Example	
	Complicating Action	Resolution Strategy	Complicating Action	Resolution Strategy
Peer	<i>“and I’m really tired”</i>	<i>“I would get angry at any situation that happens next”</i>	<i>“it would only make things worse”</i>	<i>“calm down”</i>
Family	<i>“because I’m really stressed”</i>	<i>“that would make me very upset with my mother”</i>	<i>“you just stay out of her way”</i>	<i>“make her smile”</i>
School	<i>“basically do extra work”</i>	<i>“stay after school to get extra help”</i>	<i>“and tell me everything”</i>	<i>“discuss how we can handle this situation together”</i>
Other-Peer	<i>“that I dislike when he is with her”</i>	<i>“I won’t have to be so angry”</i>	<i>“ask who’s the girl”</i>	<i>“fix the problem with him”</i>
Other-Family	<i>“and tell her how the things were”</i>	<i>“then I would everything I can to give her evidence”</i>	<i>“wait until she has calm down”</i>	<i>“explain that I didn’t do anything”</i>
Other-School	<i>“so that counts as cheating”</i>	<i>“I would of just moved on”</i>	<i>“showed her that I have no reason to cheat”</i>	<i>“and tell her that I was not cheating at all”</i>

Adolescents' processing of conflict varies by context of the conflict.

Results of the Plot Analysis, supported by a One-way Analysis of Variance, suggest that participants use varied amounts of *affect* ($F(2,69)=3.922, p=.024$) and *cognition* ($F(2,69)=3.177, p=.048$) when narrating conflict situations within different contexts. More specifically, post hoc analysis show that both number of *affect* and *cognition* mentions vary significantly in the Family and School contexts. Overall, the *psychological states* identified in the Plot Analysis show that participants used the most *affect, cognition* and reported speech in the Peer context and the least in the School context. This could indicate that for participants, the Peer context is the most salient when it comes to processing conflict. Examples of *affect* and *cognition* mentions in each context are illustrated in Table 9. In the Peer and Family contexts, *affect* was the psychological state expressed the most and *cognition* was the least frequently used psychological state, signifying that processing conflict within these contexts is highly emotional. Reported Speech was used the most frequently in the School context indicating that for participants, the voice of others is the more significant in conflict situations related to School than conflict situations related to Peers or Family. Narratives written in the Peer context included the greatest number of character mentions while narratives written in the School context included the least amount of character mentions. Although participants reported the greatest amount of speech in the School context, they reported the speech of few characters (see Table 7).

Table 9

Examples of Psychological States in Each Context

	Affect		Cognition	
Peer	<i>“try to calm myself down”</i>	<i>“I would be angry”</i>	<i>“think about it first”</i>	<i>“clear my mind”</i>
Family	<i>“shouted at me”</i>	<i>“my mom got angry”</i>	<i>“so my mindset will change”</i>	<i>“thinking that I was being selfish”</i>
School	<i>“express your emotions”</i>	<i>“and then I got angry”</i>	<i>“I’m going to reflect”</i>	<i>“she forgot to grade it”</i>
Other-Peer	<i>“I wont have to be angry at her”</i>	<i>“told him how I feel”</i>	<i>“he understands me”</i>	<i>“tell him clearly what I think”</i>
Other-Family	<i>“wait for her to calm down”</i>	<i>“make her mad about something”</i>	<i>“make her understand”</i>	<i>“she understands why you feel this way”</i>
Other-School	<i>“I would also get mad”</i>	<i>“still been very upset”</i>	<i>“see if she would understand”</i>	<i>xxxx (only one mention of cognition in this context)</i>

Different sets of characters are used when narrating in each context.

Characters portrayed in participants narratives differed by the context of the conflict situation. The Peer context narratives contained the greatest amount of character mentions while the School context contained the fewest number of characters mentioned which suggests that conflict situations in the Peer involve a greater number of people than a conflict within the Family or School context. However, when positioning themselves as another, or reflecting on how someone else handled a conflict situation, participants used the greatest number of characters in the School context and the least amount of characters in the Family context. Participants referred to themselves more in the Peer context than any other context possibly indicating that while participants identified the greatest number of characters in conflict with Peers, participants believed that they were involved in these conflict situations than conflict with Family or at School. The characters of she/her were used the most frequently in the Family context indicating that participants referenced more females than males when in processing conflict situations with family (see table 6; see table 10).

Table 10

Number of Character mentions in Narratives by Context

	Peer	Family	School	Other- Peer	Other- Family	Other- School
Self	369	255	235	58	59	78
Peer	20	10	5	18	0	2
boyfriend	3	0	0	16	0	0
ex-boyfriend	1	0	0	0	0	0
friend(s)	15	10	3	2	0	1
classmate	1	0	0	0	0	0
student(s)	0	0	2	0	0	1
Family member	7	79	10	0	16	1
brother	1	7	3	0	0	0
dad	0	1	0	0	0	0
family	2	2	1	0	0	0
mom	1	63	4	0	14	1
sibling(s)	1	3	1	0	0	0
sister	0	1	0	0	0	0
parents	2	1	1	0	2	0
School staff	17	10	78	0	0	27
counselor	0	0	2	0	0	2
one-on-one	13	10	7	0	0	0
principal	0	0	3	0	0	0
teacher(s)	4	0	66	0	0	25
Unspecified other	244	246	215	72	49	43
adult	1	0	0	0	0	0
boy(s)	2	0	0	1	0	0
coworkers	0	1	0	0	0	0
female	1	0	0	0	0	0
girl	2	1	0	17	0	0
guy(s)	0	1	0	1	1	0
he/him/his	7	8	24	20	3	2
her/she	31	104	49	17	21	29
kid	2	0	1	0	0	0
person/people	40	6	2	3	3	2
someone	26	3	3	0	1	0
their/them/they	62	38	90	10	3	4
we	6	10	2	1	2	2
you/yourself	64	74	44	2	15	4
Total	657	599	543	148	124	151

How does Experiencing and Processing Conflict vary by Context?

The data suggests that participants experienced and processed conflict differently depending on the context in which the conflict was occurring. The greatest amount of conflict escalation, or *complicating actions*, was mentioned in the Peer context narratives suggesting that the experiencing of conflict is the most complex in the Peer context. The Family context had the greatest percentage of conflict resolution, or *resolution strategies*, indicating that when experiencing conflict with family, more attention is paid to resolving the conflict than the escalation of the conflict. *Affect* and *cognition* were the most reported *psychological states* in the Peer context which could mean that this context is the most salient of the three for the adolescent participants. Of these two *psychological states*, mentions of *affect* were used more than mentions of *cognition* which suggests that participants imagined expressing more emotion than reflecting, thinking or understanding when processing a peer conflict. Across all contexts, participants referenced themselves more than any other character. More female than male characters were used in processing the Family context conflicts indicating that for participants, female family members are more commonly engaged in family conflict.

CHAPTER 5: YOUTH KNOW A VARIETY OF SELF-REGULATION STRATEGIES

To support the argument that adolescents living in high-risk settings have knowledge of self-regulation strategies and employ these strategies, data analysis included the identification of self-regulation strategies mentioned by participants as they narrated from different perspectives and within different contexts. This chapter will first present the types of self-regulation strategies used by participants followed by analyses indicating differences in types of strategies used when narrating from different author roles and within different contexts.

Types of Self-Regulation Strategies Used Vary by Author Role

A total of 19 self-regulation strategies were identified within the narratives. These 19 strategies used by participants were condensed into four mutually exclusive self-regulation strategy categories: *Active*, *Passive*, *Affective*, and *Cognitive*. *Active* strategies suggest acting to resolve the conflict situation and include, “Addressing problem,” “fighting,” “explaining self,” “seeking advice,” “talking,” and “not giving up.” *Passive* strategies involve the participant removing themselves from the conflict rather than addressing the conflict. *Passive* strategies include, “distract self,” “leave,” “no fights,” “have no control,” “ignore,” “wait for advice,” and “avoid trouble.” Self-regulation strategies that included expressed emotion were categorized as *Affective* strategies. Examples of *Affective* strategies are “express feelings,” and “calm down” while *Cognitive* strategies include, “think differently,” “reflect,” and “understand.”

The types of self-regulation strategies that were used by participants varied significantly by the author role from which the participant was narrating ($F(4,611)=12.882, p=.000$). Overall, self-regulation strategies were used the most in the As Youth Advisor to Younger Relative narratives and the least in the As Positioning as Another narratives. This could indicate that participants were more focused on providing strategies to manage oneself in a conflict situation

when they envisioned giving the advice to a younger relative rather than someone they did not know. In the As Self: Before Texting narratives, Affective strategies were the most frequently used while Passive strategies were used the most in the As Self: After Texting narratives. This suggests that participants imagine themselves as reacting more emotionally at the start of a conflict situation and more passive while they are determining how to react to the situation. Active strategies were the most commonly used strategies in both the As Recipient of Advice from Mentor and As Youth Advisor to Younger Relative narratives. The use of Active strategies in both of these narrative groups could indicate that participants are suggesting a younger relative use strategies similar to the strategies suggested by their one-on-one mentors. Cognitive strategies are used the least frequently across role categories, especially in the As Self: Before Texting narratives. The use of different strategies across roles suggests that while a participant has knowledge of a variety of self-regulation strategies, they do not find it appropriate to use all or the same strategies when positioning themselves in different roles. The types of self-regulation strategies used within each of the contexts are presented in Table 11.

Table 11

Types of Self-Regulation Strategies Used in Each Role

	As Self: Before Texting		As Self: After Texting		As Recipient of Advice from Mentor		As Youth Advisor to Younger Relative		As Positioning as Another	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Active	7	29.2	43	28.4	71	48.3	67	40.0	95	75.4
Passive	2	8.3	48	31.8	17	11.6	40	23.8	15	11.9
Affective	15	62.5	39	25.8	33	22.4	38	22.6	9	7.1
Cognitive	0	0	21	21.0	26	17.7	23	13.6	7	5.6
Total	24	100	151	100	147	100	168	100	126	100

Types of Self-Regulation Strategies Used vary by Context

When narrating conflict situations, participants identified different types of self-regulation strategies depending on the context in which the conflict occurred ($F(5,610)=14.673$, $p=.000$). More specifically, post hoc analysis showed that there was a significant difference in the type of self-regulation strategies mentioned in Peer context narratives and the School context narratives. In the Peer context, the most frequently used self-regulation strategies were Affective while Cognitive strategies were the least used. This suggests that heightened emotion rather than understanding and reflection are involved in peer to peer conflict. In the Other-Peer context, Active strategies are used the most and Affective strategies are used the least. This suggests that there is a difference in how participants would self-regulate and how they would tell someone else to self-regulate within the same Peer context. In both the Family and Other-Family contexts, Active strategies are used the most and Cognitive strategies are used the least. In both the School and Other-School context, Active Strategies are used the most and Cognitive strategies are used the least. The similarities across the two Family and two School contexts and the differences in the two Peer context could imply that there is something significant about imagining oneself in conflict with peers that is different from imagining oneself regulating through conflict with family or at school (see Table 12).

Table 12

Types of Self-Regulation Strategies Used in Each Context

	Peer		Family		School		Peer-Other		Family-Other		School-Other	
	<i>N</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
Active	51	26.0	65	38.7	72	57.1	26	74.3	24	64.9	45	83.3
Passive	50	25.5	42	25.0	15	12.0	3	8.6	6	16.2	6	11.1
Affective	67	34.2	32	19.0	26	20.6	2	5.7	5	13.5	2	3.7
Cognitive	28	14.3	29	17.3	13	10.3	4	11.4	2	5.4	1	1.9
Total	196	100	168	100	126	100	35	100	37	100	54	100

When Narrating a Conflict Situation, does the Author Role of the Participant and Context of the Conflict Determine the Self-Regulation Strategies Used?

The types of self-regulation strategies used by participants when narrating conflict situations varied by both role and context. When narrating from the role of As Positioning as Another, or rewriting how a previous participant handled the conflict situation, participants and people that they knew directly were removed from the direct conflict situation. All other roles involved the participant as an active participant in processing the conflict situation. There was a significant difference in the types of self-regulation strategies used between the As Positioning as Another narratives and the other role narratives. This suggests that when participants are personally removed from the situation, they identified different types of useful strategies as compared to when they are personally involved in processing a conflict situation. Context was also determined to be a factor in which self-regulation strategies participants thought to be useful. The types of self-regulation strategies identified varied significantly between the Family and School contexts suggesting that participants find certain strategies useful in the Family context that they may not find useful in the School context.

CHAPTER 6: YOUTH INTERPRET DIVERSE NARRATIVES

A critical aim of the current study is to determine how a context and role sensitive measure of self-regulation compares to a traditional standardized measure of self-regulation. To explore this aim, participants completed narrative activities assessing self-regulation as well as the Adolescent Self-Regulatory Inventory, a standardized measure used to assess adolescent self-regulation. After completing the narrative activities and standardized measure, a Reflective Activity was conducted with participants to allow for reflection on the measures and insight into the research findings. Participant scores on the ASRI followed a normal distribution, providing evidence for a range of self-regulation ability counter to that in the current literature, which typically suggests poor self-regulation ability among adolescents living in high-risk settings. This chapter will first present an overview of the ASRI scores and findings that indicate self-regulation strategy knowledge is not indicative of a high score on the ASRI. Findings from the participant responses to the Reflective Activity will then be discussed.

ASRI Scores Follow a Normal Curve

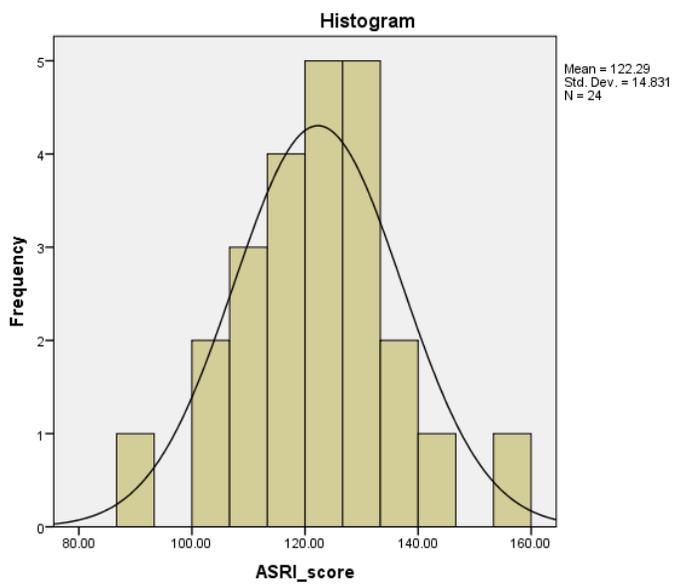
Participants completed the Adolescent Self-Regulatory Inventory (ASRI), a 36-item questionnaire created to evaluate adolescent self-regulation. Potential scores range from 36 to 180 with a higher score indicating greater ability to self-regulate. Participants' scores ranged from 88 to 157 with a mean of 122.29 (see Table 13) and were normally distributed providing evidence against the current literature that suggests adolescents living in high-risk settings have poor self-regulation ability (see Fig 5). To assess how the ASRI as a standardized measure compares to context and genre sensitive measures, Pearson's correlations were used to measure the relationship between ASRI score and number of *resolution strategies* and self-regulation

strategies. No statistically significant correlations were found between ASRI score and number of self-regulation strategies and ASRI score and number of *resolution strategies*. These findings suggest that the number of self-regulation strategies known is not correlated with ability to self-regulate as indicated by a standardized measure.

Table 13

Descriptives of ASRI Scores

N	Valid	24
Mean		122.2917
Std. Deviation		14.83087
Range		69.00
Minimum		88.00
Maximum		157.00

Figure 5. *Histogram of ASRI Score*

Reflection and analysis of reflective activity responses

Participants were asked questions about their responses to the narrative activities and their score on the ASRI. The purpose of the Reflective Activity was to gain more information about the participants' narrative responses, including their reasoning for the self-regulation strategies they used. This entire study engaged youth voices with the Reflective Activity, allowing for participant reflection on the data, providing an opportunity to reflect at a greater distance and from a different explicitly expert perspective. The Reflective Activity questions were organized into five groups with three representing Context and two representing Role. The contexts and roles discussed in each question varied based on the narratives written by the participants. Below are the groups of questions:

Question 1 (Context): “What is different about how you handle a conflict at/with (school/friends/family) school and how you handle a conflict at/with (school/friends/family)? How would these same self-regulation strategies be helpful or not helpful in a conflict at/with (school/friends/family)? In general, do you always use the same strategies to control your thoughts, feelings and behaviors? Do you use the same strategies no matter who you're with and where you are?”

Question 2 (Role): “What is different about how (you would/you would tell a younger relative to/your one-on-one would suggest you) handle a conflict and how (you would/you would tell a younger relative to/your one-on-one would suggest to you to) would handle a conflict?”

Question 3 (Role): “What is difference between the strategies you would use and the strategies (a younger relative/your one-one one) should/would suggest using in a conflict situation?”

Question 4 (Context): “Why do you think you wrote about those types of self-regulation strategies when writing about a conflict related to _____ (context) but not when writing about a conflict related to _____ or _____ (contexts)? What makes these strategies the best to use in a conflict with/at (school/family/friends)?”

Question 5 (Context): “In the activity that shows you answers of how other people handle conflict situations, you said that you didn't think they handled it in the best way. In the activity that had to do with (peer/family/school), you said that you would have_____. But in the first activity, when you are asked to respond

to the text message, you said that you would have _____. What's different in the first activity and the second activity?"

Table 14

Plot Elements Found in each Reflective Activity Response

		Actions		Affect		Cognition		Characters		Reported Speech	
		<i>n</i>	%	<i>N</i>	%	<i>N</i>	%	<i>n</i>	%	<i>n</i>	%
Context	Question 1	272	30.6	37	21.1	31	18.3	304	19.2	14	18.9
Role	Question 2	136	15.3	32	18.3	20	11.8	297	18.8	18	24.3
Role	Question 3	180	20.2	34	19.4	33	19.5	305	19.3	25	33.8
Context	Question 4	155	17.4	53	30.3	45	26.6	401	25.4	7	9.5
Context	Question 5	147	16.5	19	10.9	40	23.8	273	17.3	10	13.5
	Total	890	100	175	100	169	100	1580	100	74	100

On average there were a greater percentage of actions (55%) used in participants' responses to Reflective Activity questions that were about self-regulating from different roles. However, there was a greater average percentage of *affect* (52%) and *cognition* (59%) mentions and characters used (52%) in responses that were about self-regulation in different contexts (see Table 14). Table 15 identifies the specific characters and Table 14 includes the plot elements mentioned by participants during the activity.

Reflection and analysis of characters

Characters mentioned during the Reflective Activity were grouped into four categories: *Family members*, *General Nouns*, *Pronouns*, and *School staff*. Characters included in three of the four categories were mentioned more frequently in responses to the context related questions. Family members were mentioned 16% more, Pronouns were used 4% more and General Nouns were used 6% more in responses to the context related questions than the role related responses. However, School staff characters were mentioned 10% more in participants' responses to the role related questions than the context related questions (see Table 15). This could indicate that participants identified school staff as characters involved in a conflict situation regardless of context. This suggests that school staff do not only play a role within school context conflict, but across contexts to the peer and family contexts as well. An example of this is illustrated in the following participant response:

“In school, because like I said it's more authority in school. So I feel like you have to really be cautious of how you talk to authority because that can *affect* you and then you get in trouble with your mom and your family because they're going to be mad. Like this is not how I raised you to speak with principals and teachers and everything. So yeah.”

Table 15

Characters Mentioned in each Reflective Activity Responses

	Question 1	Question 2	Question 3	Question 4	Question 5
	<i>Context</i>	<i>Role</i>	<i>Role</i>	<i>Context</i>	<i>Context</i>
<i>Family Members</i>					
Parent(s)	3	4	0	0	0
Dad/father	1	0	0	1	8
Mom/mother	1	1	5	5	12
Sibling(s)	1	0	3	0	0
Sister(s)	1	3	0	0	0
Brother(s)	0	3	0	1	0
Aunt(s)	0	1	0	0	0
Uncle(s)	0	0	0	1	0
Cousin(s)	0	0	2	0	0
Grandma	0	1	0	0	0
Relative(s)	0	2	2	0	0
Family	23	11	3	28	0
Total	30	26	15	36	20
<i>Pronouns</i>					
I/me/mine	158	139	160	139	143
We/our	7	1	2	10	3
You	44	42	34	98	35
They/them	24	49	22	60	25
People/person	11	12	2	11	16
Someone/somebody	1	2	9	1	0
She/her/hers	0	2	13	8	4
Everyone	0	0	0	1	1
He/him/his	0	0	13	0	9

Other(s)	1	1	0	0	0
Total	246	248	255	328	236

School Staff

Teacher(s)	10	4	0	3	3
Principal(s)	0	0	0	1	0
Counselor/Therapist/One-on-One	0	2	18	3	6
Total	10	6	18	7	9

General Nouns

Girl(s)	0	1	2	0	2
Guy(s)	0	1	0	1	0
Kid(s)	0	0	1	0	0
Friend(s)	18	15	6	24	1
Adult	0	0	8	2	0
Enemies	0	0	0	1	0
Authority	0	0	0	2	0
Boyfriend	0	0	0	0	5
Total	18	17	17	30	8
Overall Total	304	297	305	401	273

Reflection and analysis of actions.

The actions used by participants in Reflective Activity responses were grouped into seven categories: *Antagonistic, Cognitive, Affective, Verbal, Compassionate, Discipline, and Nondescript*. The actions included in the Nondescript category were used most frequently in response to all five groups of questions. Of the six remaining action categories, Verbal and Cognitive actions were the most frequently used. There was a greater percentage of affective actions (62%) used in responses to the context related questions than the role related questions. Participant responses to the role related questions included more verbal actions (60%) than the context related questions. Overall, more action words were used in responses to context related questions (55%) (see Table 16). Below are examples of verbal actions used in response to role related questions:

“My one-on-one, she would **tell** me to **talk** to an adult, yeah, basically **tell** an adult. For me, I would **tell** my younger sibling the same thing, if you're upset go **talk** to mom, or go **talk** to an adult that can handle the problem, because I know I can't.”

“With a friend I feel like able to, I don't know, **speak up** more. Because if it involves my family I wouldn't want to, say, **talk back** or fight back because ... I don't know.”

Table 16

Actions Mentioned in each Reflective Activity Response

	Question 1	Question 2	Question 3	Question 4	Question 5
	<i>Context</i>	<i>Role</i>	<i>Role</i>	<i>Context</i>	<i>Context</i>
<i>Antagonistic</i>					
Fight	2	1	4	3	1
Confront	0	0	1	1	0
Argue	0	0	0	2	0
Insult	1	0	0	0	0
Total	3	1	5	6	1
<i>Cognitive</i>					
Think	7	3	14	4	16
Understand	1	4	1	8	6
Learn	0	1	0	0	0
Consider	0	2	0	1	0
Listen	2	1	2	1	0
Solve	1	1	1	1	4
Assess	0	0	0	0	2
Guess	1	4	3	2	1
Noticed	0	1	0	0	0
Total	12	17	21	17	29
<i>Affective</i>					
Express	2	0	0	0	0
Feel	7	7	5	13	7
Bursting	1	0	0	0	0
Total	10	7	5	13	7
<i>Verbal</i>					
Talk	18	19	26	11	20

Teach	1	2	0	0	0
Persuade	0	0	0	0	1
Suggest	0	1	3	0	1
Total	19	22	29	11	22

Compassionate

Respect	4	1	0	0	0
Encourage	0	1	0	1	0
Fix	0	3	1	2	1
Support	0	0	0	2	0
Help	0	0	0	1	1
Improve	0	0	0	1	0
Total	4	5	1	7	2

Discipline

self-regulate	1	0	0	2	0
Practice	1	0	0	0	0
Control	3	3	1	1	1
Total	5	3	1	3	1

Nondescript

Do	9	11	20	8	23
go/went	16	28	26	20	22
get/take	9	10	18	11	8
Have	23	17	12	26	8
Want	6	0	6	10	1
Come	2	2	5	1	3
Try	12	9	12	10	9
Push	1	0	0	0	1
Raise	1	0	0	3	0
Handle	2	1	7	2	0

Look	1	0	1	2	1
Put	1	0	3	2	1
Transfer	0	1	0	0	0
Give	0	2	8	3	8
Total	81	118	98	85	81
Total Actions	272	136	180	155	147

Reflection and analysis of psychological states

The greatest percentage of *affect* (52%) and *cognition* (59%) were found in responses to the Context related Reflective Activity questions. This suggests that when providing an explanation of why they would self-regulate differently in contexts, participants reflected more on their own *psychological states*, or how they experienced the conflict, rather than on the conflict itself.

Participants' Explanation of Self-Regulation

When reflecting on conflict with family, there were common narratives that emerged in the Reflective Activity. Many participants stated that immediate family members understood them and therefore, participants were less likely to hold back in expressing their thoughts and emotions with family. Others felt that their family expected a lot from them and they made more of an effort to self-regulate with family so not to disappoint them. These narratives are exemplified in the following responses:

“Because someone formal ... If I'm trying to get a job, that would ruin my reputation and they would think differently about me. But friends? Friends are kind of like a time period thing. Like over the summer? That's gone. And they might even transfer schools. Friends? I don't even consider friends, friends like they do there, I guess. I wouldn't fight in front of my family 'cause they expect a lot from me, and I don't wanna ruin that.”

“If it's with family, it's way harder because you have to deal with them just like giving you that mean look, or giving you that type of, "Oh, I'm upset with you" face. Especially, if it's an adult they use the word "disappointment", which is really upsetting.”

“Because I don't feel like ... Because I love my family, and out of everyone ... I was raised to always put your family first, so I don't ever like arguing with my family or ... I have gotten into fights with my family, but I'll always make sure that it was resolved because it's my family. I could've fought with them an hour ago, but if other people came up to me, I know that they would still have my back because it's my family, so I prefer talking about it because it shows that I care about them ... That I'll consider what they have to say.”

“If I have a problem with my teachers, I will be, let's say, more respectful and more professional in a way, because I have respect to my teacher. Yeah. With my family, maybe I could express my feelings more with my family since they know me from birth.”

“I guess with friends ... With family, I don't act stud. I don't curse ... In their eyes, when I'm in the house, I'm an angel. But when I'm outside, like with my friends and stuff ... I'm not good. I act stud, I do stud things.”

When reflecting on how they would manage conflict situations from different roles, a common narrative was that while participants did not feel they could positively self-regulate, they would suggest positive strategies to a younger relative. In addition, participants were inclined to believe that a younger relative had a better ability to self-regulate than the participant themselves. These narratives are displayed in the responses below:

“For a younger relative I mean I have one cousin who's a year younger than me. I don't think I had a problem with her because I know her since we're kids that I know that she can handle her emotions to herself cause she's used to it and how she can handle the feeling and thoughts to herself. Even when her mom gets her mad like get on her nerves like she told me that she tells herself just breathe in and relax, calm down. It's your mother we're talking about. For me, I'm short tempered, I get mad easily only certain topics or anything. Sometimes I can hold it in and sometimes I don't. It's like sometimes I'm rebellious against my mom when I can't handle it.”

“I guess the advice they would tell me is someone similar to me because I would calm down, but I would still be under stress. I guess my feelings would still be put into the conflict when going up to them. I guess when I'm put into the situation where I have to give advice to my younger siblings or younger family members, I would usually go with confront them and see what happened within the situation that both made you angry or frustrated. Don't just leave it alone because it's going to get worse. I would just say go up to them and see what went wrong and see if one, you could have a person like an adult or a counselor that would go for you, they're going to be a mediator within the whole conversation. You can have an adult conversation if you feel like you can't control your feelings or your actions”

Conflict with friends was commonly described by participants as easier to “get over” or resolve. Calming down was typically a way participants described how they self-regulate when in a conflict with friends. Below are examples of reflective activity responses that highlight these common narratives:

“Mostly cause I'm more closer with my friends than with school. And so I probably calm down more ... I don't know, it depends really. With family and school there's different situations that I have to figure out. And then with friends its more easier cause I'm closer with them, so I can easily figure things out with them.”

“I wrote it about with friends, because friends you can wait until they calm down and then talk to them and apologize. With family, you're around them a lot so you can't, technically, just apologize like that you have to wait a couple days, but with friends you can just let them calm down for a few hours and then they'll be fine.”

Participants reported not feeling like they could fully express themselves with teachers and at school. They commonly mentioned respect as a reason for this. Some participants noted that their relationship with a teacher determined how they self-regulated around the teacher and if/how they expressed their feelings. Below are examples of these common narratives:

“With a conflict at school I can't really do much especially if it relates to a teacher because you're supposed to be respectful to them. The one thing I can really do is just walk away and talk to someone I trust like the guidance counselor, and just not get into it because this is not my friend. I can't just argue with them. I'm not going to win either way, so I just have to go to the guidance counselor for it.”

“Maybe now, after one month, I gained my confidence with my teacher, especially if I have the connection with them. It depends on the teacher. If they just ignore me all the time, maybe I won't go to them. But if I do, I will definitely talk to them.”

“I think with family, you could be more impolite and more personal. You could raise your voice more and be more honest and say what you really mean. But then at school with your friends, you have a conflict but you try to be more polite and everything. And I don't know, it's just like you don't usually say, go beyond a certain point, with argument with teachers and in school with friends or something.”

How do context/role sensitive measures of self-regulation (process assessments) compare to the Adolescent Self-Regulatory Inventory?

The Adolescent Self-Regulatory Inventory was created to measure self-regulation in adolescents with possible scores ranging from 36 to 180. Higher scores indicate greater self-regulation ability. This measure lacks the ability to measure the nuances of self-regulation that a context/role sensitive measure can otherwise capture. Through the use of narrative activities and a Reflective Activity within the narrative activities, this study was able to capture the reasoning

behind participants' choice of self-regulation strategies as well as the differences in how they use these strategies across contexts.

CHAPTER 7: ADOLESCENT SELF-REGULATION IS A RELATIONAL SKILL

Specific aims of the current study were to understand how adolescents experience and process conflict and self-regulate when narrating a conflict situation from different role perspectives and within different contexts. In addition, this study aimed to determine how a context/role sensitive measure of self-regulation compares to a standardized measure. The current study argues that adolescent self-regulation is a skill sensitive to purpose, other people, and the situation. While self-regulation is a popular area of research in the current literature, the majority of the literature studies child self-regulation rather than adolescent regulation, with a context specific focus. In addition, much of the current literature simplifies self-regulation into a trait-based skill that one does or does not possess. The context/role sensitive measure in combination with a Reflective Activity provided evidence for self-regulation being a complex skill that is used differently with different people in different spaces. Results of the plot and quantitative analyses are discussed below by author role and context. Following these two sections is discussion of how the role and context sensitive measures used in this study compare to participants' score on the ASRI, a standardized measure.

How does Experiencing, Processing and Self-Regulating in a Conflict Vary by Role?

The process of self-regulation was found to vary by the author role of the participant in a conflict situation. Conflict escalation, as defined by the percentage of *complicating actions*, was found to be greatest when the participants were processing conflict from the position of themselves, at the beginning of the conflict, before sending a text message to their one-on-one mentor. Conflict resolution, as defined by the percentage of *resolution strategies*, occurred less frequently in these role narratives. Together, this suggests that conflict escalation occurs more

often or participants felt the need to focus on the escalation more than the conflict resolution. These findings suggest that from the role of As Self: Before Texting, participants were fixated on the actual conflict and the escalation of that conflict rather than finding strategies to resolve the conflict. Perhaps when self-regulating, participants in this role were responding to the escalating events of the conflict rather than the resolution. Also found in the As Self: Before Texting narratives was a greater use of affective language as compared to cognitive language. This provides further evidence for participants experiencing heightened emotions in a conflict situation, suggesting that in the beginning of a conflict situation, heightened emotions are what influences participants' choice of self-regulation strategies. These findings are supported by the current literature that suggests adolescent behavior is often driven by emotion (Sturman and Moghaddam, 2011; Albert and Steinberg, 2011). Given that adolescence is a period of heightened emotion and emotion influences adolescent behavior, it makes sense that participants would be more likely to respond to the highly emotional escalation of a conflict rather than the resolution of the conflict (Somerville, 2013; Steinberg, 2014).

In comparison to the As Self: Before Texting narratives, participants used approximately 20% less affective language in the As Self: After Texting narratives and approximately 20% more cognitive language. Similarly, the results of self-regulation strategy analysis show that *affective* strategies were the most frequently used type of strategy in the As Self: Before Texting narratives while *passive* strategies were the most used in the As Self: After Texting narratives. These findings indicate that self-regulation is initially a highly emotional process that becomes more cognitive as one processes the event in which he or she is self-regulating. The current literature that suggests adolescent decision-making and behavior is strongly based on emotion is supported by the findings of the current study (Albert and Steinberg, 2011). Strong emotion

found in the As Self: Before Texting and reflection and decision-making regarding the conflict situation found in the As Self: After Texting provide further evidence for emotion influencing behavior and decision-making.

Similar to the As Self: Before Texting role, participants used more *complicating actions* than *resolution strategies* when taking on the As Youth Advisor to Younger Relative role, indicating that participants paid greater attention to escalation of the conflict when they imagined themselves giving advice to a younger relative. Participants may be more focused on the conflict affecting their younger sibling than providing guidance to resolve the conflict. Supporting these findings, results show that participant used approximately 33% more affective language as compared to cognitive language when narrating from this role. However, unlike narratives written from the As Self: Before Texting and After roles, participants used more *Active* and *Passive* strategies than *Affective* or *Cognitive* strategies. This suggests that rather than suggesting a younger relative self-regulate as a response to the escalation of the conflict, participants were able to advise using more conflict resolution-focused strategies.

Participants used a greater percentage of *resolution strategies* when imagining themselves receiving advice from a mentor in a conflict situation. This was the only role category that contained more *resolution strategies* than *complicating actions*. This suggests that participants imagined that their one-on-one mentors would suggest more self-regulation strategies aimed at resolving the conflict than reacting to the escalation of the conflict. However, the same number of *resolution strategies* were mentioned in both the As Youth Advisor to Younger Relative and Receiving Advice from a Mentor role, possibility indicating that participants have internalized the conflict resolution advice their one-on-one has given them and are mirroring that advice when advising a younger relative. In addition, *Active* self-regulation

strategies were also the most frequently used strategies in these two role categories. This provides greater evidence for participants giving younger siblings the internalized advice received from their mentors.

Similar to the As Self: After Texting role narratives, the ratio of *complicating actions* to *resolution strategies* was small as compared to other role categories when participants were asked to position themselves as another or write a narrative about how they think another participant could have handled the conflict situation differently. This similarity could mean that when As Positioning as Another, participants are still processing the conflict situation as they would themselves. Overall there were still a greater number of *complicating actions* than *resolution strategies* used in this role and a 20% difference in affective language and cognitive language used. Approximately 75% of the self-regulation strategies voiced when As Positioning as Another were *Active* strategies. These results are similar to those of the As Youth Advisor to Younger Relative and Receiving Advice from a Mentor roles, suggesting that while participants may process the conflict situation as they would themselves, they are taking a different perspective into consideration when imagining experiencing and self-regulating during the conflict.

The results of the Narrative Analysis and self-regulation strategy analysis indicate that participants experienced, processed and self-regulated in different ways as they narrated from varied roles in a conflict situation. Results showed that participants used more affective than cognitive language when narrating from all roles, but that the ratio of *complicating actions* to *resolution strategies* varied across the role narratives. For example, *complicating actions*, representing conflict escalation, were mentioned approximately 48% more than *resolution strategies*, signifying conflict resolution, in the As Self: Before Texting narratives, but only 2%

more in the As Self: After Texting narratives. Results indicate that when imagining themselves as Receiving Advice from a Mentor, participants identified more conflict resolution than conflict escalation. The types of strategies used from different roles also varied greatly. For example, there were zero *Cognitive* strategies mentioned by participants in the As Self: Before Texting narratives, but 26 mentions when Receiving Advice from a Mentor. These results provide evidence for self-regulation not being a constant trait of participants, but a role dependent state. Taking on these different roles allowed participants to demonstrate their self-regulation knowledge as they determined how and when to use this knowledge when positioning from different roles in a conflict situation.

How Does Experiencing, Processing and Self-regulating in a Conflict Vary by Context?

The results of the Narrative Analysis and self-regulation strategy analysis indicate that experiencing, processing and self-regulating in a conflict situation not only vary by the role of the participant in the conflict, but also vary by context in which the conflict occurs.

Complicating actions were used more frequently in the Peer context than in the School or Family contexts. Within the Peer context, *complicating actions* were used approximately 28% more than *resolution strategies* and both affective and cognitive language were used more frequently in the Peer context than the other two contexts. These findings suggest that for participants, processing and experiencing conflict in the Peer context is more salient than conflict in the Family or School contexts. The large percentage of *complicating actions* used within these context narratives indicate that more conflict escalation than resolution is involved in peer related conflicts. In addition, processing conflict for participants in the Peer context is shown to be highly emotional as is evidenced by the largest percentage of affective language mentions in this context as compared to the other two contexts. Further providing evidence for highly

emotional peer-related conflicts, the results of the self-regulation strategy analysis show that of the four strategy categories, Affective strategies consisted of approximately 34% of the mentioned strategies in the Peer context. These findings are supported by literature which states that adolescents respond to peer conflict or scrutiny with heightened emotion (Somerville 2013). Reflective activity responses revealed a common narrative of Peer-related conflicts among participants, that these conflicts are easier to “get over” or resolve. Tamm, Tulviste, Urm (2018) found that adolescents are more likely to negotiate with peers to resolve conflict, validating this common narrative in the responses and also the findings of the narrative analysis which shows that Active self-regulation strategies were the second commonly used strategy in peer conflict. The reason participants focused on the conflict escalation in their Peer context narratives could be that they assumed the conflict would be quickly resolved or they would quickly move on from the conflict so there was no need to process or work through the conflict resolution.

When positioning themselves as another in the Peer-Other context, or evaluating another participant’s narratives and stating what the participant should have done differently in that situation, there was almost an equal percentage of *complicating actions* and *resolution strategies*. Also, within this Peer-Other context, Active strategies were the most frequently used self-regulation strategy. Therefore, the results suggest that when reflecting on the actions of another participant, participants in the current study, understood a Peer conflict situation differently than when they were creating the narratives themselves.

The Family context contained less *complicating actions* and more *resolution strategies* as compared to the Peer context, however, *complicating actions* still outnumbered *resolution strategies* in the Family context narratives. This could indicate that while participants emphasized escalation of the conflict more than the resolution, they were more concerned about

resolving the conflict when it occurred in a Family context than when it occurred in a Peer context. Similarly, Van Doorn, Branji and Meeus (2011) found that adolescents used positive problem solving to resolve conflict with their mothers. The Family context narratives contained 44% more *affect* than *cognition* indicating that, like Peer context conflicts, Family related conflicts are also highly emotional. This is supported by the common narratives found in the Reflective Activity response. Participants described family members as understanding them and as a result, participants stated that they were less likely to hold back expressing emotions to family members. In contrast to the Peer context, participants used *Active* self-regulation strategies in the Family context more than any other type of strategy. These findings suggest that participants find Family related conflicts more likely to be resolved or more important to resolve than Peer related conflicts. Another common narrative was that some participants felt that their family expected a lot from them and expressed an effort to self-regulate and resolve conflict to avoid disappointing family members.

Results of the narrative analysis and self-regulation strategy analysis of the Family-Other narratives show participants mentioned conflict escalation and resolution almost an equal amount. However, affective language was used more than three times more than cognitive language. *Active* self-regulation strategies were the most frequently mentioned within this Family-Other context. This suggests that when reflecting on how another person addressed a Family-related conflict, while participants still found these conflicts to be highly emotional, participants focused more on using self-regulations strategies aimed at resolving the conflict rather than responding to the escalation of it.

The School context narratives contained the least amount of *complicating actions* and *resolution strategies* as compared to the Peer and Family context narratives. These narratives

also contained the least amount of affective and cognitive language and like the Family context, the most frequently mentioned self-regulation strategies were *Active* strategies. The lack of *complicating actions* and *resolution strategies* could signify less conflict within the School setting or participants feelings of a lack of agency when it comes to conflicts in School. This is supported in the Reflective Activity where participants they expressed feeling like they could not express themselves in school, mainly with teachers. The use of *Active* self-regulation strategies suggests that participants were focused on resolving the conflict rather than responding to its' escalation. During the Reflective Activity, some participants expressed not feeling like the could express themselves in school which supports the narrative analysis findings.

However, in the School-Other context in which participants wrote about what they think a participant should have done in a school related conflict, participants used more *complicating actions* and fewer *resolution strategies* as compared to the Family-Other context. Overall, participants identified more conflict escalation than resolution and used more affective than cognitive language in the Family-Other context. Similar to the Family-Other context, participants identified Active self-regulation strategies the most in the School-Other context, suggesting that while they may be more focused on the escalating conflict, participants still aimed to resolve the conflict.

How do Context/Role Sensitive Measures of Self-Regulation Compare to the Adolescent Self-Regulatory Inventory?

Results indicate that the context/role sensitive measures used in this study offer a more complex understanding of adolescent self-regulation that a standardized measure cannot provide. While the Adolescent Self-Regulatory Inventory offers a numerical score of self-regulation ability, the context/role sensitive measures used in this study provide rich descriptive information about participants variation in self-regulation ability, including how and when they self-regulate.

The ASRI scores obtained in this study ranged from 88 to 157 and were normally distributed. A higher score on this standardized measure suggests a greater ability to self-regulate. No significant correlation was found between ASRI score and number of Self-Regulation strategies or number of *resolution strategies* written by participants in their narratives. There was also no significant correlation between participants ASRI score and type of Self-Regulation strategies mentioned. These findings support the current study that suggests knowledge of ways to self-regulate is not a positive indicator of overall self-regulation. These findings are in opposition with the current literature that suggests knowledge of self-regulation strategies is an indicator for positive self-regulation and indicate a need for more context sensitive measures, such as the relational narratives used in this study, which can provide greater detail about an adolescent's knowledge and use of self-regulation strategies.

The current literature often assesses children's self-regulation by their response inhibition in tasks unrelated to real life situations (Tominey and McClelland, 2011; McClelland and Cameron, 2012). Self-regulation interventions which aim to improve self-regulation skill in children and adolescents, rely heavily on teaching self-regulation strategies. These interventions are typically for a "high-risk" population, regarded as a population who has difficulty self-regulating (Kim-Spoon, Cicchetti & Rogosch, 2013; Evan and Kim, 2013). However, the current study provides evidence that adolescents living in high-risk settings who are at risk for high school dropout already have knowledge of a variety of self-regulation strategies. ASRI scores obtained in this study indicate that participants, who are considered to live in high-risk settings, do not score heavily toward the lower end of the score range.

These results are not meant to discredit the current literature, which finds that high-risk environments, typically involving trauma, impact the development of self-regulation. Instead,

this study promotes a strengths perspective approach to research with adolescents living in high-risk settings. The findings from the current study provide evidence for this population having positive self-regulation skill, including self-regulation strategy knowledge and use of these strategies. Using a role/context sensitive measure, this study was able to capture a more comprehensive evaluation and understanding of adolescent self-regulation than can be obtained through a single score standardized measure. In addition, the variety in self-regulation approaches found role and context suggest that self-regulation, for adolescents, varies based on the context they are in and their position to a conflict. The results of the current study can be used to inform future research and intervention to best support adolescents in developing and building upon their self-regulation skill. In addition, the results of this study provide evidence for a more comprehensive and consistent definition of self-regulation across the literature. We may be missing out on a deeper understanding of adolescent self-regulation by having restricted and inconsistent definitions of self-regulation in the literature.

Although this study responded to some of the limitations of the previous study, which included the addition of a standardized measure for comparison and a Reflective Activity with participants (Conover and Daiute, 2017). However, future research could benefit from addressing the limitations of this study. Participants in this study were recruited from one high school located in a major city. The sample size was small with 24 participants and they were enrolled in an after-school program at the high school, which could have impacted their self-awareness and life skill development. These limitations affect the generalizability of the findings to the general adolescent population. In addition, the conflict situations, while they were loosely based on text messages received by a one-on-one mentor, could have not been relatable to all participants. Situations experienced personally by participants could have provided a more

accurate understanding of how participants self-regulated in conflict situations. Future research could address these limitations by recruiting a larger sample size of adolescents from several different high schools across more than one major city. Future research should also recruit participants from different settings, not only high-risk settings, to compare findings of a population that is said to have strong self-regulation skills and a population that is said to have difficulty self-regulating.

CHAPTER 8: IMPLICATIONS FOR FUTURE PRACTICE-BASED RESEARCH

The current study provides evidence of a need for a more comprehensive, holistic framework for understanding adolescent self-regulation, including a constant definition and equivalent methods to ensure that future research is assessing and measuring adolescent self-regulation in a consistent way. With restricted and inconsistent definitions of self-regulation in the literature, it becomes difficult to truly compare findings across the literature. Findings from the current study suggest that a deeper understanding can be found with the use of context-based, relational narrative measures and a Reflective Activity. Participants in the current study varied how and why they self-regulated from different author roles and contexts. Although some adults may not deem the strategies used as “correct” or “positive,” they were identified by participants as useful strategies and were still attempts at self-regulating. Therefore, a more inclusive definition of self-regulation should acknowledge that any attempt at regulating one’s emotions, cognitions and behaviors is considered self-regulating whether it is agreed upon that the strategies used are practical and functional. The current study can be used to inform and expand the scope of the adolescent self-regulation literature in the following three ways: (1) evidence for a more complete definition of self-regulation, (2) a more comprehensive understanding of adolescent’s use of self-regulation strategies than can be found from a standardized measure and (3) to inform intervention with both adolescents and adults.

The findings of this study can also be useful in creating more effective self-regulation interventions for adolescents. Most of the current interventions are created for children and so this study also provides evidence for continued support of self-regulation development into adolescence. Given the findings of the current study, future interventions can focus not on only

teaching self-regulation strategies but identify the foundational skills necessary for the use of self-regulation as well as encourage participants to identify appropriate and inappropriate norms for different contexts and interpersonal interactions. Working with participants to gain a deeper level of understanding around their individual ability to self-regulate can help them to become more self-aware. Using the current study's proposed model of adolescent self-regulation as a framework, future interventions should create supportive environments where participants can have positive experiences with adult mentors. Within these environments, participants can process and reflect on their own self-regulation and identify ways in which different strategies can be useful to help them achieve their goal in situations that call for self-regulation. This will support adolescents in navigating those contexts or situations in which it is particularly difficult to self-regulate. Instead of labeling adolescents as having the ability or not having the ability to self-regulate, the self-regulation skills and strategies one does possess can be identified as strengths and built upon instead of a focus on their lack of skill.

Subsequent research could include a greater sample size to ensure a more representative population and reliable data. Data collected from a larger sample size would allow for the use of quantitative measures that were not valid in the current study and validation of the current study's narrative measures. Adolescents considered to live in high-risk settings from areas other than urban environments would also provide greater reliability. In addition to participants living in high-risk settings, a future study could also include a broader demographic, those not considered to live in high-risk settings. This could validate the argument of the current study, that adolescents living in high-risk settings, similar to their counterparts, have knowledge of self-regulation strategies, but do not always use them. Inclusion of other age groups, such as

participants in late childhood and early adulthood could be useful in emphasizing the complexity and uniqueness of adolescent self-regulation.

Future research could also incorporate a greater focus on participants' experiences in completing the ASRI and feedback specific to their understanding and interpretation of the questions included in the measure. In addition, a more thorough description of the significance and meaning behind participants' scores can be useful in future research, providing participants with clearer information to use when determining if their ASRI score is representative of their self-regulation ability. Participants could also be asked to create their own measures of self-regulation with explanations of how and why the measure more appropriately assesses adolescent self-regulation. Extensions of the current study could include more direct reflective questions related to the self-regulation strategies mentioned in the narrative activities and participants' reasoning for why they believe the strategies to be practical or useful. This can provide more insight into why adolescents use self-regulation strategies that are identified as "negative" by adults, potentially changing adults understanding and interpretation of adolescents' implementation of such strategies. Finally, based on this study, I recommend, that across all future research, any definition of self-regulation be relational, that is invites young participants to express themselves in relation to diverse meaningful purposes, situations, and others. The current study suggests the following definition, "the strategic, and sometimes automated use, of adaptive strategies to control emotions, cognitions and behaviors in relation to diverse meaningful purposes, situations and others."

APPENDIX

Table A1

Procedures

	PART 1 Completed in one visit (Activities completed on computer)			PART 2 Completed approx. 2 months after Part 1 (Completed in person)
MEASURE	<i>Participant Narrative Activity</i>	<i>Positioning As Another Activity</i>	<i>Standardized Measure: ASRI</i>	<i>Reflective Activity</i>
DESCRIPTION	<ul style="list-style-type: none"> ➤ Three example text messages will be presented to participants. ➤ Each text message describes a conflict situation in a different context, one with a peer, one with a family member and one with a school staff person. ➤ Participants will be directed to respond to four prompts, representing different genres, regarding each of the three text messages. 	<ul style="list-style-type: none"> ➤ Participants will be presented with each of the three example text messages from the previous activity. ➤ Participant narratives from the previous study will be presented to current participants. ➤ Participants will be prompted to answer questions about how the previous participants responded to the narrative prompts. 	The Adolescent Self-Regulatory Inventory is a 36 item measure assessing self-regulation of adolescents.	Participants will be asked questions related to their responses to the narrative activities and their score on the ASRI.

Figure A1

Adolescent Self-Regulatory Inventory

Adolescent Self-Regulatory Inventory (ASRI)

Name: _____ Date: _____

Rate how true each statement is for you ranging from Not at all true for me to Really true for me. Mark the box under the rating that best applies to you.

Not at all true for me	Not very true for me	Neither true nor untrue for me	Somewhat true for me	Really true for me
------------------------------	----------------------------	--------------------------------------	-------------------------	-----------------------

1. It's hard for me to notice when I've had enough (sweets, food, etc.).
2. When I'm sad, I can usually start doing something that will make me feel better.
3. If something isn't going according to my plans, I change my actions to try and reach my goal.
4. I can find ways to make myself study even when my friends want to go out.
5. I lose track of the time when I'm doing something fun.
6. When I'm bored I fidget or can't sit still.
7. It's hard for me to get started on big projects that require planning in advance.
8. I can usually act normal around everybody if I'm upset with someone.
9. I am good at keeping track of lots of things going on around me, even when I'm feeling stressed.
10. When I'm having a tough day, I stop myself from whining about it to my family or friends.
11. I can start a new task even if I'm already tired.

Not at all true for me	Not very true for me	Neither true nor untrue for me	Somewhat true for me	Really true for me
------------------------------	----------------------------	--------------------------------------	-------------------------	-----------------------

12. I lose control whenever I don't get my way.

13. Little problems detract me from my long-term plans.

14. I forget about whatever else I need to do when I'm doing something really fun.

15. If I really want something, I have to have it right away.

16. During a dull class, I have trouble forcing myself to start paying attention.

17. After I'm interrupted or distracted, I can easily continue working where I left off.

18. If there are other things going on around me, I find it hard to keep my attention focused on whatever I'm doing.

19. I never know how much more work I have to do.

20. When I have a serious disagreement with someone, I can talk calmly about it without losing control.

21. It's hard to start making plans to deal with a big project or problem, especially when I'm feeling stressed.

22. I can calm myself down when I'm excited or all wound up.

23. I can stay focused on my work even when it's dull.

24. I usually know when I'm going to start crying.

25. I can stop myself from doing things like throwing objects when I'm mad.

26. I work carefully when I know something will be tricky.

Not at all true for me	Not very true for me	Neither true nor untrue for me	Somewhat true for me	Really true for me
------------------------------	----------------------------	--------------------------------------	-------------------------	-----------------------

27. I am usually aware of my feelings before I let them out.

28. In class, I can concentrate on my work even if my friends are talking.

29. When I'm excited about reaching a goal (e.g., getting my driver's license, going to college), it's easy to start working toward it.

30. I can find a way to stick with my plans and goals, even when it's tough.

31. When I have a big project, I can keep working on it.

32. I can usually tell when I'm getting tired or frustrated.

33. I get carried away emotionally when I get excited about something.

34. I have trouble getting excited about something that's really special when I'm tired.

35. It's hard for me to keep focused on something I find unpleasant or upsetting.

36. I can resist doing something when I know I shouldn't do it.

Reflective Activity Questions

Introduction to reflective activity

PI: “Last time we met you did some activities on the computer where you were asked to answer questions. Today I want to ask you about your answers to those questions. As a reminder, this information stays confidential between you and me and you have been assigned an ID number so nobody will be able to identify what you wrote in the activities. Only I have that information here so we can talk about it. Do you have any questions”?

PI: “Today we will first review the activities you did last time you were here. I printed out your responses so you can look at them to refresh your memory. Then I’ll ask you some questions about your responses.”

Reviewing activities and definitions

PI: “The first activity you did was writing responses to text messages that were shown to you. We will call those responses, narratives (this will be printed out so participants can refer to the definition). You were also asked to rewrite someone else’s narratives if you thought there was a better way to respond to the situations in the text messages. Finally, you were asked to answer a set of questions.”

PI: “The activities you did and the questions you answered were about self-regulation. To make sure that we both understand what self-regulation means, I’m going to define it for us. Self-regulation is the ability to control our thoughts, feelings and behaviors (this will be printed out so participants can

refer to the definition). The activities you completed last time show us how you self-regulate and what self-regulation strategies you know about. Self-regulation strategies are the ways you control your thoughts, feelings and behaviors (this will be printed out so participants can refer to the definition).

Half of participants began with the following section of the Reflective Activity, “Reflective Activity: Participant Activity and Positioning as Another Activity

Half of participants began with the section, “Reflective Activity: Standardized Measure”

Reflective Activity: Participant activity and positioning as another activity.

PI: “Now I have some questions about what you wrote in the activities. I’m going to share with you the examples of self-regulation we found in the narratives you wrote for the activities” (show examples and read aloud) (narratives will be printed and self-regulation strategies will be highlighted)

PI: “In the activity that was about a conflict with/at (school/ friends/family), you wrote about self-regulation strategies the most.

PI: “What is different about how you handle a conflict at/with (school/friends/family) school and how you handle a conflict at/with (school/friends/family)? How would these same self-regulation strategies be helpful or not helpful in a conflict at/with (school/friends/family)? In general, do you always use the same strategies to control your thoughts, feelings and behaviors? Do you use the same strategies no matter who you’re with and where you are?”

EXAMPLE: “In the activity that was about a conflict at school, you wrote about self-regulation strategies the most. What is different about how you handle a conflict at school and how you handled a conflict with family or friends? How would these same self-regulation strategies be helpful or not helpful in a conflict with friends or family? In general, do you always use the same strategies to control your thoughts, feelings and behaviors? Do you use the same strategies no matter who you’re with and where you are?”

PI: “In the activity that was about a conflict with/at (school/ friends/family), you wrote the least self-regulation strategies in your narratives.”

PI: “What is different about how you handle a conflict at/with (school/friends/family) school and how you handle a conflict at/with (school/friends/family)? How would these same self-regulation strategies be helpful or not helpful in a conflict at/with (school/friends/family)? In general, do you always use the same strategies to control your thoughts, feelings and behaviors? Do you use the same strategies no matter who you’re with and where you are?”

EXAMPLE: “In the activity that was about a conflict with friends, you wrote the least self-regulation strategies. What is different about how you handle a conflict with friends and how you handle conflict with family or at school? Do you always use the same strategies to control your thoughts feelings, and behaviors? Do you use the same strategies no matter who you’re with and where you are?”

PI: “In the activity that asked you to think about (what you would do/what you would tell a younger relative to do/ what your one-on-one would suggest to you to do) in that situation, you wrote about self-regulation strategies the most.”

PI: “What is different about how (you would/you would tell a younger relative to/your one-on-one would suggest you) handle a conflict and how (you would/you would tell a younger relative to/your one-on-one would suggest to you to) would handle a conflict?”

EXAMPLE: “In the activity that asked you to think about what you would do in that situation, you wrote about self-regulation strategies the most. What is different about how you would handle a conflict and how you would suggest to a younger sibling to handle a conflict? What is different about how you would handle a conflict and how your one-on-one would tell you to handle a conflict?”

PI: ““In the activity that asked you to think about (what you would do/what you would tell a younger relative to do/ what your one-on-one would suggest to you to do) in a conflict situation, you wrote the least self-regulation strategies in your narratives.”

PI: “What is different about how (you would/you would tell a younger relative to/your one-on-one would suggest you) handle a conflict and how (you would/you would tell a younger relative to/your one-on-one would suggest to you to) would handle a conflict?”

EXAMPLE: “In the activity that asked you to think about how your one-on-one would suggest you handle a conflict situation, you wrote the least self-regulation strategies. What is different about how your one-on-one would suggest you handle

a conflict and how you would handle a conflict? What is different about how your one-on-one would suggest you handle a conflict and how you would tell a younger relative to handle a conflict?”

PI: “In the activity that was about a conflict with/at (context) _____, _____ (self-regulation strategies) were the types of self-regulation strategies you wrote about.”

PI: “Why do you think you wrote about those types of self-regulation strategies when writing about a conflict related to _____ (context) but not when writing about a conflict related to _____ or _____ (contexts)? What makes these strategies the best to use in a conflict with/at (school/family/friends)?

EXAMPLE: “In the activity that was about a conflict at school, Talking and Walking Away were the types of self-regulation strategies you wrote about. Why do you think you wrote about those types of self-regulation strategies when writing about a conflict related to school, but not when writing about a conflict related to friends or family? What makes these strategies the best to use in a conflict at school?

(if applicable) PI: “In your narratives, you said that you would suggest to a younger relative to use _____ (self-regulation strategies) strategies, but when asked about what you would do, you wrote that you would use _____ (self-regulation strategies).”

PI: “What is difference between the strategies you would use and the strategies a younger relative should use in a conflict situation?

EXAMPLE: “In your narratives, you said that you would suggest to a younger relative to use Walking Away and Not Letting It Bother You strategies, but when asked about what you would do, you wrote that you would use Aggression and Standing Up for Self strategies. What is the difference between the strategies you would use and the strategies a younger relative should use in a conflict situation?”

(if applicable) PI: “In your narratives, you said that your one-on-one would suggest for you to use _____ (self-regulation strategies) strategies, but when asked about what you would do, you said you would use _____ (self-regulation strategies).”

PI: “What is difference between the strategies your one-on-one would suggest for you to use and the strategies you would use in a conflict situation?”

EXAMPLE: “In your narratives, you said that your one-on-one would suggest for you to use Reflecting and Walking Away strategies, but when asked about what you would do, you said you would use Aggression and Protecting Yourself strategies. What is difference between the strategies you would use and the strategies a younger relative should use in a conflict situation?”

Reflective Activity: Standardized Measure

PI: “Now I’m going to remind you of some of the questions on the questionnaire you filled out last time. One question asked, ‘When I’m sad, I can usually start doing something that will make me feel better?’ This means that you can make yourself feel better when you get sad. Another question asked, ‘I can calm myself down when I’m

excited or all wound up” meaning that you know when you’re excited or all wound up and know things to do to calm yourself down. After you answered all the questions on the questionnaire, a score was calculated. This score is supposed to tell us how well you can self-regulate, meaning how well you can control your thoughts, feelings and behaviors. The lowest score is 36 and the highest score is 180.”

PI (to half of the participants): “What do you think your score is?”

“Your score is _____. “Did the ASRI correctly measure how well you can control your thoughts, feelings and behaviors? Do you agree or disagree with your score?”

PI (to half of participants): “Your score on the ASRI is _____, which means _____. Did the ASRI correctly measure how well you can control your thoughts, feelings and behaviors? Do you agree or disagree with your score? What do you think your score should be?”

EXAMPLE: “Your score on the ASRI is 40, which means you have poor self-regulation. Did the ASRI correctly measure how well you can control your thoughts, feelings and behaviors? Do you agree or disagree with your score? What do you think your score should be?”

REFERENCES

- Achenbach, T.M., & Edelbrock, C.S. (1981). Behavioral problems and competencies reported by parents of normal and disturbed children aged 4 through 16. *Monographs of the Society for Research in Child Development, 46* (188).
- Ainsworth, M. D. (1972). Attachment and dependency: A comparison.
- Ainsworth, M. D. (1985). Patterns of infant-mother attachments: antecedents and effects on development. *Bulletin of the New York Academy of Medicine, 61*(9), 771.
- Albert, D., Chein, J., & Steinberg, L. (2013). The teenage brain: Peer influences on adolescent decision making. *Current Directions in Psychological Science, 22*(2), 114-120.
- Arnett, J. J. (2001). Conceptions of the transition to adulthood: Perspectives from adolescence through midlife. *Journal of adult development, 8*(2), 133-143.
- Arnsten, A.F. (2009). Stress signaling pathways that impair prefrontal cortex structure and function. *Nature Reviews Neuroscience, 22*(2), 410-422.
- Bandura, A. (2001). Social cognitive theory: an agentic perspective. *Annual Review of Psychology, 52*, 1-26.
- Bernier, A., Beauchamp, M. H., Carlson, S. M., & Lalonde, G. (2015). A secure base from which to regulate: Attachment security in toddlerhood as a predictor of executive functioning at school entry. *Developmental Psychology, 51*(9), 1177.
- Bernier, A., Carlson, S. M., & Whipple, N. (2010). From external regulation to self-regulation: Early parenting precursors of young children's executive functioning. *Child Development, 81*(1), 326-339.
- Bjork, R. A., Dunlosky, J., & Kornell, N. (2013). Self-regulated learning: Beliefs, techniques, and illusions. *Annual review of psychology, 64*, 417-444.
- Blakemore, S., & Robbins, T.W. (2012). Decision-making in the adolescent brain. *Nature Neuroscience, 15*, 1184-1191.

- Block, J.H. & Block, J. (1969). The California Child Q-Set. *Institute of Human Development*, University of California, Berkeley.
- Boschen, M. J., & Casey, L. M. (2008). The use of mobile telephones as adjuncts to cognitive behavioral psychotherapy. *Professional Psychology: Research and Practice*, 39(5), 546.
- Bowers, E. P., Johnson, S. K., Warren, D. J., Tirrell, J. M., & Lerner, J. V. (2015). Youth–adult relationships and positive youth development. In *Promoting Positive Youth Development* (pp. 97-120). Springer International Publishing.
- Boydell, K. M., Hodgins, M., Pignatiello, A., Teshima, J., Edwards, H., & Willis, D. (2014). Using technology to deliver mental health services to children and youth: a scoping review. *Journal of the Canadian Academy of Child & Adolescent Psychiatry*, 23(2).
- Carver, C. S., & Scheier, M. F. (2000). On the structure of behavioral self-regulation. In M. Boekaerts, P. R. Pintrich, M. Zeidner, M. Boekaerts, P. R. Pintrich, M. Zeidner (Eds.) , *Handbook of self-regulation* (pp. 41-84). San Diego, CA, US: Academic Press.
- Castelnuovo, G., Gaggioli, A., Mantovani, F., & Riva, G. (2003). New and old tools in psychotherapy: The use of technology for the integration of the traditional clinical treatments. *Psychotherapy: Theory, Research, Practice, Training*, 40(1-2), 33.
- Chauveron, L. M., Linver, M. R., & Urban, J. B. (2015). Intentional self regulation and positive youth development: Implications for youth development programs. *Journal of Youth Development*, 10(3), 89-101.
- Cicchetti, D., Rogosch, F. A., & Toth, S. L. (2006). Fostering secure attachment in infants in maltreating families through preventive interventions. *Development and psychopathology*, 18(03), 623-649.
- Cole, P.M., Dennis, T.A., Smith-Simon, K.E., and Cohen, L.H. (2008). Preschoolers' emotion

- regulation strategy understanding: Relations with emotion socialization and child self-regulation. *Social Development*, 18(2), 325-352.
- Conover, K., & Daiute, C. (2017). The process of self-regulation in adolescents: A narrative approach. *Journal of Adolescence*, 57, 59-68
- Daiute, C. (2010). *Human development and political violence*. Cambridge University Press.
- Daiute, C. (2014). *Narrative inquiry: A dynamic approach*. Thousand Oaks, CA: Sage Publications.
- Fjeldsoe, B. S., Marshall, A. L., & Miller, Y. D. (2009). Behavior change interventions delivered by mobile telephone short-message service. *American journal of preventive medicine*, 36(2), 165-173.
- Foulkes, L., & Blakemore, S. J. (2018). Studying individual differences in human adolescent brain development. *Nature neuroscience*, 1.
- Gestsdottir, S., Geldhof, G.J., Paus, T., Freund, A., Adalbjarnardottir, S., Lerner, J.V., & Lerner, R.M. (2015). Self-regulation among youth in four Western cultures: Is there an adolescencespecific structure of the Selection-Optimization-Compensation (SOC) model? *International Journal of Behavioral Development*, 39(2), 171-185.
- Gestsdottir, S., & Lerner, R. M. (2008). Positive development in adolescence: The development and role of intentional self-regulation. *Human Development*, 51(3), 202-224.
- Gilligan, R. (2006). Adversity, resilience and young people: The protective value of positive school and spare time experiences. *Children & Society*, 14(1), 37-47.
- Gioia, G. A., Espy, K. A., & Isquith, P. K. (2003). Behavior Rating Inventory of Executive Function – Preschool Version (BRIEF-P). Odessa, FL: Psychological Assessment Resource.

- Glaser, B., & Strauss, A. (1967). *Discovering grounded theory*. Chicago, IL.
- Gopalan, G., Alicea, S., Conover, K., Fuss, A., Gardner, L., Pardo, G., & McKay, M. (2013). Project Step-Up: Feasibility of a Comprehensive School Based Prevention Program. *Journal of Early Adolescence*, 33(1), 131-154.
- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, 39(3), 281-291.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of personality and social psychology*, 85(2), 348.
- Gunnar, M. R., & Fisher, P. A. (2006). Bringing basic research on early experience and stress neurobiology to bear on preventive interventions for neglected and maltreated children. *Development and psychopathology*, 18(03), 651-677.
- Gyurak, A., Gross, J. J., & Etkin, A. (2011). Explicit and implicit emotion regulation: a dual-process framework. *Cognition and Emotion*, 25(3), 400-412.
- Job, V., Dweck, C. S., & Walton, G. M. (2010). Ego depletion—Is it all in your head? Implicit theories about willpower affect self-regulation. *Psychological science*, 21(11), 1686-1693.
- John-Steiner, V., & Mahn, H. (1996). Sociocultural approaches to learning and development: A Vygotskian framework. *Educational Psychologist*, 31(4), 191-206.
- Kagan, J., Snidman, N., Kahn, V., Towsley, S., Steinberg, L., & Fox, N. A. (2007). The preservation of two infant temperaments into adolescence. *Monographs of the Society for Research in Child Development*, i-95.
- Karoly, P. (1993). Mechanisms of self-regulation: A systems view. *Annual Review of*

Psychology, 44(1), 23.

Kochanska, G. Coy, K.C. and Murray, K.T. (2001). The development of self-regulation in the first four years of life. *Child Development, 72(4), 1091-1111.*

Kinnucan, C. J. & Kuebli, J. E. (2013). Understanding explanatory talk through Vygotsky's theory of self-regulation, in Sokol, B.W., Grouzet, F.M., & Muller, U. in *Self-Regulation and Autonomy (Chap 11)*, Cambridge University Press.

Lerner, R. M., Almerigi, J. B., Theokas, C., & Lerner, J. V. (2005). Positive youth development a view of the issues. *The journal of early adolescence, 25(1), 10-16.*

Lightfoot, C. (1997). *The culture of adolescent risk-taking*. Guilford Press.

Magar, E., Phillips, L.H., and Hosie, J.A. (2008). Self-regulation and risk-taking. *Personality and Individual Differences, 45, 153-159.*

Mann, T., De Ridder, D., & Fujita, K. (2013). Self-regulation of health behavior: social psychological approaches to goal setting and goal striving. *Health Psychology, 32(5), 487.*

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist, 53(2), 205-220.*

McClelland, M., Geldhof, J., Morrison, F., Gestsdóttir, S., Cameron, C., Bowers, E., & Grammer, J. (2018). Self-regulation. In *Handbook of life course health development (pp. 275-298)*. Springer, Cham.

Mischel, W. (2014). *The marshmallow test: Mastering self control*. New York: Little, Brown and Company.

Moilanen, K.L. (2007). The Adolescent Self-Regulatory Inventory: the development and validation of a questionnaire of short-term and long-term self-regulation. *Journal of*

Youth and Adolescence, 36(6), 835-848.

Molden, D. C., & Dweck, C. S. (2006). Finding "meaning" in psychology: a lay theories approach to self-regulation, social perception, and social development. *American Psychologist*, 61(3), 192.

Mueller, M. K., Phelps, E., Bowers, E. P., Agans, J. P., Urban, J. B., & Lerner, R. M. (2011). Youth development program participation and intentional self-regulation skills: Contextual and individual bases of pathways to positive youth development. *Journal of adolescence*, 34(6), 1115-1125.

O'Reilly, R., Bishop, J., Maddox, K., Hutchinson, L., Fisman, M., & Takhar, J. (2007). Is telepsychiatry equivalent to face-to-face psychiatry? Results from a randomized controlled equivalence trial. *Psychiatric Services*, 58(6), 836-843.

Ponitz, C.C., McClelland, M.M., Matthews, J.S., and Morrison, F.J. (2009). A structured observation of behavioral self-regulation and its contribution to kindergarten outcomes, *Developmental Psychology*, (45) 3, 605-619.

Polkinghorne, D. E. (2005). Language and Meaning: Data Collection in Qualitative Research, *Journal of Counseling Psychology*, (52)2,137-145.

Raffaelli, M., Crockett, L. and Shen, Y. (2005). Developmental stability and change in self-regulation from childhood to adolescence. *The Journal of Genetic Psychology*, 166(1), 54-75.

Romer, D. (2010). Adolescent Risk Taking, Impulsivity, and Brain Development: Implications for Prevention. *Developmental Psychobiology*, 52(3), 263–276.

Rothbauer, P. (2008). Triangulation. *The SAGE encyclopedia of qualitative research methods*, 1,

892-894.

Shields, A.M., Cicchetti, D. and Ryan, R.M. (1994). The development of emotional and behavioral self-regulation and social competence among maltreated school-age children.

Development and Psychopathology, 6, 57-75.

Spreen, O., Strauss, E. & Sherman, E. (2006). A compendium of neuropsychological tests:

Administration, norms and commentary. *Oxford University Press*, 477-499.

Steinberg, L. (2014). *The Age of Opportunity*. Boston: Houghton Mifflin Harcourt.

Tolan, P., Gorman-Smith, D., & Henry, D. (2004). Supporting families in a high-risk setting:

Proximal effects of the SAFE Children preventive intervention. *Journal of Consulting and Clinical Psychology*, 72(5), 855-869.

Tominey, S.L. and McClelland, M.M. (2011). Red light, purple light: Findings from a randomized trial using circle time games to improve behavioral self-regulation in preschool. *Early education and development*, 22(3), 489-519.

Tough, P. (2012). *How children succeed: grit, curiosity, and the hidden power of character*. New York: Mariner Books.

Vygotsky, L. (1978). Interaction between learning and development. *Readings on the development of children*, 23(3), 34-41.

Wei, J., Hollin, I., & Kachnowski, S. (2011). A review of the use of mobile phone text messaging in clinical and healthy behaviour interventions. *Journal of telemedicine and telecare*, 17(1), 41-48.

Wilson, B. A., Alderman, N., Burgess, P. W., Emslie, H., & Evans, J. J. (1996). Behavioural

assessment of the dysexecutive syndrome (BADS). Bury St. Edmunds, UK: Thames Valley Test Company.

Woolford, S. J., Blake, N. & Clark, S.J. (2013). Texting, tweeting, and talking: E-

communicating with adolescents in primary care. *Contemporary Pediatrics*, 30(6).

Zill, N. (1990). Behavioral Problems Index based on parent report (Publication No. 9103).

Washington, DC: Child Trends.

Zimmerman, B. J. (2000). Attaining self-regulation: a social cognitive perspective. In M.

Boekaerts, P.R., Pintrich, and M., Zeidner (Eds). *Handbook of self-regulation* (Chap 2).

Academic Press: San Diego, CA.

Zimmerman, B. J. & Schunk, D. H. (2004) Self-regulating intellectual processes and outcomes: a

social cognitive perspective, in D. Y. Dai & R. J. Sternberg (Eds) *Motivation, emotion*

and cognition (Lawrence Erlbaum Associates, New Jersey).