SELF-REGULATION BY ADOLESCENT SUBSTANCE USERS IN THE CONTEXT OF OBSERVED FAMILY INTERACTION

BY

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ABSTRACT

Prevailing views of adolescent self-regulation (ASR) in the developmental and family psychology literatures share a common regard for this construct as a disposition or trait. An alternative contextual perspective would view self-regulation as a transaction between an individual and the relevant social context. The purpose of the current study was to examine such a perspective among substance-using adolescents and their families.

Participants were 457 substance-using adolescents who had been referred for treatment at eight geographically disparate U.S. and Puerto Rico community treatment agencies. Families participated in a family interaction assessment task (FIAT) in which they planned a menu, described what pleased and displeased them about each other, and discussed a recent family argument. Later, using video recordings of these FIATs, three independent teams of observers reliably coded (a) the adolescent drug user’s self-regulation in the interrelated domains of attention, behavior, emotion, and initiation; (b) specific structural family systems patterns; and (c) the overall quality of family functioning.

In multiple regression analyses, structural family systems variables together explained significant variation in ASR, controlling for global family functioning and number of participating family members. ASR demonstrated significant negative associations with disengagement and conflict avoidance, and significant positive associations with parent-adolescent support role reversal, outside triangles, and parent-child triangles. The positive associations were surprising, given that those constructs represent structural anomalies historically associated with youth maladjustment. ASR
ratings decreased across the three tasks, and some of the associations of structural family variables with ASR changed across tasks. With some exceptions, ASR-family variable relations were consistent across adolescent gender and ethnicity. When gender moderation was apparent, associations between ASR and structural family variables were stronger for females than for males.

These findings provide support for the importance of an interpersonal context to manifestations of adolescent “self” regulation, and suggest that ASR may represent a context-based, dynamic state that is, to an extent, interpersonal in nature. These results further suggest that structural family systems theory can inform such a contextual perspective.
INTRODUCTION

Assuming that “self”-regulation exists, how can researchers and clinicians understand it, and where can they look to find it? Individuals have long been assumed to consciously and deliberately regulate, maintain, and direct aspects of their attention, cognitions, behavior, and emotions. Does this process of regulation occur solely within the individual, or does it partly lie in the individual’s environment, including interactions with other people? Is it the person himself or herself who regulates his or her own mental and behavioral processes according to free will and goals, or do aspects of that person’s social context play a role, such that “self” regulation is to some extent interpersonal in nature?

As a prelude to studying self-regulation in the context of observed family interaction in adolescent substance users, this paper will begin by providing an overview of self-regulation, as it is commonly portrayed in the developmental and family psychology research literature. It will also propose an alternative, complementary, point of view, and in so doing, raise a question regarding whether self-regulation can be thought of as a disposition (trait) or a context-dependent, fluctuating attribute (state). This paper will review literature on links between self-regulation and commonly studied adolescent problems, as well as adolescents’ family relationships. It will introduce structural family systems theory, its tenets and supporting research evidence, along with their potential relevance to self-regulation, particularly in adolescent drug users. Finally, it will review research evidence relating to the possible moderating roles of gender and ethnicity on these associations.
Contrasting Views of Self-Regulation

The concept of self-regulation has received much attention in the research literature. In general terms, it has been defined as a tendency to use a wide range of strategies in various contexts to regulate attention, cognitions, emotions, and behavior. Researchers have studied self-regulation in children and adults of various ages, with adolescent self-regulation becoming an increasingly studied topic over the past several decades. The emergence and development of self-regulation is also one of the most widely studied constructs in the developmental psychology and developmental psychopathology literatures. Researchers in developmental psychopathology have studied infant, child, and adolescent self-regulation and its links to internalizing and externalizing disorders, as well as its trajectories in relation to family and to parent-child variables, such as caregiver attachment patterns.

Beyond the convergence on a general definition of self-regulation noted above, some variations exist. Some self-regulation theorists (e.g. Crockett, Moilanen, Raffaeli, & Randall, 2006) present self-regulation as a unitary, dimensional construct, whereas others (e.g., Wills & Dishion, 2004; Wills, Walker, Mendoza, & Ainette, 2006; Wills, Windle, & Cleary, 1998) make the distinction between good self-regulation and poor self-regulation as related but separate constructs. According to the latter view advanced by Wills and his colleagues, good self-regulation refers to planning, dependability, focused attention, having a future-orientation, self-monitoring, delay of gratification, and a

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1 To illustrate its increased focus as a topic of study, Moilanen (2007) found 382 National Institute of Health (NIH) grants related to self-regulation between 2000 and 2006, compared to 282 during the period between 1990 and 1999.
tendency to cope by actively solving problems. Poor self-regulation refers to a tendency
towards impulsiveness, distractibility, impatience, having a present-orientation,
avoidant/withdrawn coping, irritability/anger proneness, and an inability to delay
gratification.

Prevailing views of self-regulation in the developmental and family psychology
literatures share a common regard for this construct as an ability or a skill, or as
something that a person has or does not have, in quantities that vary between individuals
more than within them. Whether viewed as a single construct or as parallel constructs,
research to date has focused more on the trait-like aspects of adolescent self-regulation
(ASR) than on the social contexts in which it occurs. A review of the self-regulation
literature on children and adolescents presents a picture of self-regulation as a trait or
skill that exists (or does not exist) in fixed quantities. Developmental psychopathology
research has examined typical development of self-regulatory abilities in order to
understand their aberrations, and has examined its potential role as a risk or protective
factor in the development of childhood disorders. Published studies have tended to focus
more on the dispositional stability believed to be inherent to problematic youth behavior,
rather than on contributing situational factors, and, when it comes to adolescent self-
regulation, more on etiology or emergence than on maintenance.

In contrast to largely context-free measures as described above, an alternative,
context-based perspective might take aspects of the social or interpersonal situation into
account. A contextual perspective of adolescent self-regulation would view self-
regulation as a transaction between an individual and his or her environment. Under this
view, regulation of attention, behavior, cognitions, and emotions occurs jointly between the adolescent and the current social context, be it family, peer group, school, organizational, or some other context. For example, a family-based view of self-regulation would view adolescent “self” regulation as based on ongoing sequences of interaction between the adolescent and his or her family. Structural family systems theory (e.g., Minuchin, 1974; Haley, 1986) could inform such a perspective by positing how specific types of family-level, dyadic, and triadic interaction in a family might relate to what might otherwise be conceptualized as individual adolescent self-regulation. The next few paragraphs will present reviews of the extant research on both dispositional adolescent self-regulation and structural family systems theory (SFST), followed by a description of a proposed SFST perspective on adolescent “self” regulation.

Research on Dispositional Adolescent Self-Regulation

Much of the existing research on dispositional adolescent self-regulation focuses on the development of self-regulation throughout infancy, childhood, and early adolescence. It posits that in early infancy, self-regulation occurs as a function of the interaction between a baby and his or her caretaker, but that beyond a certain age, when the child learns to undertake emotional, behavioral, and cognitive tasks of increasing difficulty, self-regulation resides wholly within the individual. Developmental theorists (e.g., Rafaelli, Crockett, & Shen, 2005; Wills and his colleagues) often study the emergence of self-regulation throughout childhood (e.g., Raikes, Robinson, Bradley, Raikes, & Ayoub, 2007) and have tied adolescent self-regulation to childhood temperament (e.g., Wills & Dishion, 2004), which inherently also has a dispositional
focus. Researchers studying self-regulation in children and adolescents often refer to “levels” of self-regulation which can be measured at discrete time points (e.g., Miller & Byrnes, 2001, conceptualized “self-regulated decision making” as a skill that develops by adolescence; Raffaeli, Crockett, & Shen, 2005, found that self-regulation, as they measured it, remained stable between middle childhood and early adolescence; Vermeiren, De Clippele, Schwab-Stone, Ruchkin, & Deboute, 2002, connected lower levels of self-regulation to lower IQ and to delinquency in adolescence).

In their reports of findings, these developmental studies present a common view that self-regulation exists in fixed quantities that do not necessarily vary from situation to situation, and develop over longer time frames (e.g., years). Even questions on self-report measures of self-regulation developed by researchers for use in their studies (e.g., Wills et al., 1999) that ask about behavior in a situational context still assume an overall general skill level, and rely on trait terms (e.g., impatience, dependability) to characterize self-regulation. A recently developed self-report index of self-regulation designed for use by adolescents (Moilanen, 2007) takes context into account by including a distinction between the ability to self-regulate in the short term vs. the long term, e.g., making plans to meet goals, as adolescents are at a point in their development when they can begin making plans over weeks, months, or years. This scale lends a temporal perspective to the construct of self-regulation, but retains the notion of self-regulation as an ability, albeit one that may vary depending on the time frame under consideration.

Dispositional adolescent self-regulation, measured in various ways (e.g., by self-, parent-, or teacher-report, or by direct observation), has been associated with various
commonly studied adolescent problems. Studies have found both concurrent and prospective links between adolescent self-regulation and substance use. In samples of middle and high school students, behavioral and emotional self-regulation were related to level of substance use (Wills, Walker, Mendoza, & Ainette, 2006; Wills, Windle, & Cleary, 1998). Another study found that self-reported use of positive and negative self-regulatory coping strategies related inversely and positively, respectively, to both initial level of substance use and rate of growth in substance use in a sample of 1,668 participants assessed at age 12.5 years and two yearly follow-ups (Wills, Sandy, Yaeger, Cleary, & Shinar, 2001). Other studies have examined the role of self-regulation as a mediator or moderator in the linkages between other variables and substance use. For example, Walker, Ainette, Mills, and Mendoza (2007) found that self-reported good self-regulation partially mediated the link between religiosity (including non-religious spirituality) and decreased substance use. In a survey of 7th grade students, Wills, DuHamel, and Vaccaro (1995) found indirect effects of temperament characteristics on substance use through self-control and other factors related to motivation. Other researchers found that good self-regulation mitigated the impact of negative family and adolescent life events and peer substance use with adolescent substance use over a four year period between 6th and 9th grades (Wills, Ainette, Stoolmiller, Gibbons, & Shinar, 2008). Over two assessment periods, Wills, Resko, Ainette, and Mendoza (2004) found that both good self-regulation and poor self-regulation mediated the associations of parental and peer support with adolescent substance use (mean age 12.3 years). Adolescent self-regulation has also demonstrated associations with problems arising from
substance use, including interpersonal, institutional, excessive use, and control problems, in a cross-sectional study (Wills, Sandy, & Shinar, 1999). In another study using self-report, self-regulation moderated the relation of substance use level to concurrent control and (especially) conduct problems, such that good self-regulation had a protective effect and poor self-regulation had a risk-enhancing effect (multiplying the risk by as much as fourfold) on these paths (Wills, Sandy, & Yaeger, 2002).

Adolescent self-regulation has been found to be both concurrently and longitudinally related to internalizing (e.g., depression and anxiety) and externalizing (e.g., conduct problems), a finding which should not be surprising given that internalizing and externalizing are conceptually relevant to self-regulation of emotion and behavior. In a sample of very low income youth ages 8 to 18, interviewer-rated self-regulation was negatively related to child- and mother-report of behavior problems in the home and in the community, as well as to children’s self-reports of depression and anxiety (Buckner, Mezzacappa, & Beardslee, 2009). In a longitudinal study, teacher-reported self-regulation was associated with a latent psychological functioning variable derived from self-report measures of depression, hostility, and self-esteem, over a two-year period (Brody & Ge, 2001). In another longitudinal study, teacher-reported adolescent self-regulation (goal setting, planning, appreciation of consequences) mediated the association between mother-reported parental support, involvement, and conflict and teacher-reported internalizing and externalizing, among rural African-American adolescents in single-parent households, even when controlling for initial levels of externalizing and internalizing (Kim & Brody, 2005). Mother-reported self-regulation was found to be
concurrently associated with adolescent report of conduct problems among African-American adolescents in single mother-headed households (Zalot, Jones, Forehand, & Brody, 2007). This association was exacerbated by residence in a risky neighborhood (low on resources, high on risks) for adolescent girls in this sample, a finding in support of the importance of context, even beyond the family system.

Other studies have documented associations between self-regulation and other commonly studied adolescent outcomes, such as risky sexual behavior and academic functioning. In a cross-sectional study of African-American adolescents (mean age 13 years), Wills, Gibbons, Gerrard, Murry, and Brody (2003) found associations between self-reported self-regulation of attention, affect, and behavior and decreased risky sexual behavior, mediated by positive perceptions of sex engagers. (This sample had a base rate for sexual activity of less than 25%.) In another study, mother report of adolescent self-regulation of emotion, attention, and activity at ages 12 and 13 was linked to adolescent report of less risky sexual behavior four years later, even after controlling for negative peer pressure and adolescent autonomous decision making (Rafaelli & Crockett, 2003). Another study found that adolescents with (parent-reported) psychological profiles indicating good self-regulation of affect, attention, and behavior at ages 12 and 13 were doing better academically than their less-regulated peers four years later (Crockett, Moilanen, Raffaelli, & Randall, 2006).

Researchers have found associations between dispositional adolescent self-regulation and the historical family processes held by certain theories (e.g., psychodynamic and social learning theories) to be crucial to adolescent development. As
an example of such a theory, Wills’s transactional model of self-regulation development posits that child temperament (early appearing, stable characteristics reflecting physical activity level, task orientation, and negative or positive emotionality) interacts with parenting variables to influence early parent-child relationships, and subsequently, the development of self-regulation (Wills & Dishion, 2004). According to this theory, children with better attentional orientation and more positive emotionality are likely to have better relationships with their parents and subsequently to develop better self-regulation. Children with more difficult temperaments are likely to have more conflicted relationships with parents, and to develop poorer self-regulation.

The published literature on parent-adolescent relationships has looked at the effects of aspects of these relationships on components of self-regulation and found some bi-directional associations between self-regulation and parenting. For example, Brody and Ge (2001) found that, in a sample of 120 11- and 12-year-olds from two-parent families, dispositional adolescent self-regulation and parenting style (nurturant-responsive vs. harsh-conflicted, measured by a combination of child report and observation of parents during dyadic tasks) were both stable across a one-year period. Teacher-rated self-regulation at the first measurement occasion was negatively related to harsh-conflicted, but unrelated to nurturant-responsive, parenting at the second measurement occasion one year later. Self-regulation ratings by teachers were also related to contemporaneous parenting styles (positively to nurturant-responsive parenting, negatively to harsh-conflicted parenting). The authors also found associations between
changes in parents’ harsh-conflicted parenting styles over a one-year period and teacher ratings of child self-regulation at the end of that year.

The current research literature does not ignore adolescents’ family and social environments and their relations to dispositional self-regulation. Indeed, the field of developmental psychopathology is predicated on the notion that development occurs within family, school, neighborhood, and cultural contexts that affect, and are reciprocally affected by, individual behavior. The literature appears to view these contextual environments as related to, but not necessarily part of, individual self-regulation. In postulating that family factors are of paramount importance to the development of an individual’s regulatory behaviors, developmental theorists have often focused on the history-based etiology more than the present-based maintenance of self-regulation. For example, research questions advanced have often asked how family factors influence the development of self-regulation, rather than how they are linked to the manifestations of ongoing youth misbehavior. In their studies of the associations between self-regulation and social or family factors, researchers often study self-regulation as a separate entity from these social and family relationships, rather than an ongoing, dynamic aspect of them. In doing so, they commonly focus on static levels of self-regulation, rather than viewing self-regulation as a dynamic phenomenon that may occur as part of recursive, circular patterns of interaction.

**Measurement of Self-Regulation**

There are many variations in approaches to measurement of dispositional self-regulation. Although numerous measures have been around for decades (e.g., the Kendall
& Wilcoxon, 1979, self-report measure continues to be used in numerous studies) and dispositional self-regulation has become an increasingly studied construct, there does not as yet exist a gold standard for its measurement. Due to developmental limitations, measures of self-regulation in infants and young children involve direct observation and behavioral measures, such as separation paradigms and delay of gratification tasks. Observed behavior in these contexts is thought to generalize to a wider variety of contexts in the child’s life. For example, a child’s ability to accept a more desirable prize at a later time rather than a less desirable prize immediately is thought to represent an aspect of that child that he or she possesses at all times (e.g., self-regulation). Researchers often use parent reports in place of self-reports or observational methods with young children. Like self-reports of dispositional self-regulation, parent reports of dispositional self-regulation result in a summary self-regulation “score” taken across varied contexts in which the parent knows the child. Parent reports are also often used with adolescents, although not as often, as adolescents are generally satisfactorily able to answer questions about their own behavior and thinking.

Measures of adolescents and adults tend to rely more on self-report questionnaires, and to be more focused on outcomes than on strategies. (Self-regulation in adolescents and adults is thought to be more cognitively based than it is in children, and adolescents and adults are more able to report on their own thoughts and emotions than are younger children.) These measures of self-regulation in adolescents and adults tend to be dispositional and trait-based, rather than contextual or state-variable. Although they can allow for reporting of behavior in a broad range of contexts, self-report
measures lend themselves more to a summary “trait” score than to contextually based information, and as such these scales often do not capture sequences of interaction that may be relevant to self-regulation or to adolescent problem maintenance. In addition, there are no established measures for reliably assessing contextual variations in self-regulation, for example, whether an adolescent might demonstrate better self-regulation with parents or with peers, at home or at school, or in different social and interpersonal contexts. Even questions pertaining to self-regulatory behaviors that use context clues in the question stems add up to results suggesting a general dispositional stability or overall level of self-regulation.

Reports on self-regulatory behaviors by multiple informants can offer advantages over self-report alone, though they share some of the same methodological limitations. Self-reports offer benefits over parent reports in that, when able, individuals may be the best equipped to report on all aspects of their behavior. For example, an adolescent may not disclose to a parent the extent of his or her substance use, and therefore the adolescent would be able to provide more accurate information on his or her substance use than either parent would. On the other hand, reports from parents, peers, or teachers can lend additional information in that these important others may see aspects of an adolescent’s behavior of which he or she remains unaware. The use of collateral reports can be valuable with adolescents in providing information that a single source may miss (e.g., Achenbach, 2006). Meta-analyses have demonstrated discrepancies between multiple informants in reporting mental health concerns of both children (e.g., Achenbach, McConaughy, & Howell, 1987, found an average inter-informant correlation of .28) and
adults (e.g., Achenbach, Krukowski, Dumenchi, & Ivanova, 2005, found correlations of .44 for externalizing and .43 for internalizing problems). When different sources give discrepant reports, researchers have options as to how to combine the discrepant information. They could choose to account for both reporters’ scores, consistently favor one source over another, or consistently choose the highest or lowest scores. In a recent paper, Kendall and Drabick (2010) argue for the use of information from multiple reporters, including direct observation, with a professional integrating the information to arrive at a comprehensive perspective. Such a practice, they argue, could help capture the consistency (or lack thereof) of various behaviors across contexts, as well as taking into account the motivation of the reporter in question (e.g., a parent might exaggerate the extent of their child’s symptoms to obtain treatment for that child).

*Toward a Contextual View of ASR: Structural Family Systems Theory*

In contrast to the prevailing views of adolescent self-regulation as a dispositional construct residing within the individual adolescent, a situational, context-based view\(^2\) would consider that adolescent in his or her environment, and view “self” regulation as a transaction between adolescent and context. Theories of family functioning, including structural family systems theory (e.g., Minuchin, 1974; Minuchin, Montalvo, Guerney, Rosman, & Schumer, 1967; Minuchin et al., 1978; Haley, 1980, 1986), could inform such a perspective of self-regulation in family interactions. The following section will provide an overview of the basic tenets of structural family systems theory, how it has been

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2 Although the following sections will focus on the family as the relevant context, SFST is one variant of a context-based perspective. Other relevant contexts might include the school, neighborhood, peer setting, or the larger cultural, social, and economic system. Indeed, Minuchin (1974) wrote that therapists could intervene in any relevant context which would be amenable to change.
applied to youth problem behavior, and research supporting the application of the theory.

**Structural Family Systems Theory: Basic Tenets**

Structural family systems theory (SFST), which evolved from the early clinical observations of Minuchin (1974) and Haley (1987), proposes that a family’s structure is defined by their ongoing patterns of interaction, and that some types of structures are more adaptive than others are. Families’ structures include various subsystems, such as the spouse, parent, and sibling subsystems, as well as some form of hierarchy. According to SFST, a well-functioning hierarchy assigns more authority and more responsibility to adults than to children in the family. Family structure also includes boundaries regulating interaction between and within individual members and family subsystems. These boundaries define who participates in family transactions, as well as the nature of members’ participation, and range from rigid to diffuse. Rigid boundaries often characterize disengaged families, in which family members are largely distant from each other. These types of boundaries can foster independence and autonomy among members, though at the expense of mutual support. In disengaged families, it is difficult for family members to come together when needed, due to their distance from each other. Diffuse boundaries often characterize enmeshed families, in which family members are very tightly connected to each other. These connections allow for mutual support and affection, but often occur at the expense of individual autonomy. In enmeshed families, when one member is distressed, the distress tends to be felt throughout the family system, and responses may be chaotic and disorganized. Clear boundaries, the desired outcome, preserve independence and autonomy among family members, but also allow for
interaction, affection, and the mobilization of support when needed.

According to structural family systems theory, problematic youth behavior – including problematic “self” regulation – reflects anomalies of structure within the family; in turn, these organizational anomalies play a key role in maintaining youth problem behavior. In this way, behavioral symptoms of an individual child or family member are inextricably interwoven with ongoing, circular sequences of family interaction, such that a symptom both maintains, and is maintained by, the family system of interpersonal relationships in which it occurs. Structural anomalies may include enmeshed or disengaged relationships, as well as reversals in the normative hierarchies between adults and children, and often violate cross-generational boundaries. Boundary-violating patterns can occur at a dyadic level, in the case of a parent-child role reversal of either support (e.g., the child supports a parent as much as or more than vice versa) or control (e.g., a child defines reality or tends to tell a parent what to do). They can also occur in triads, in the case of a cross-generational coalition (e.g., a child is consistently allied with one parent against the other parent, or the child’s alliance with one parent is stronger than the alliance of the two parents with each other) or in the case of triangulation (e.g., spouses in a conflicted marital dyad pull a child in to help settle a conflict, or a distressed married couple directs their attention outward toward a child to avoid focusing on their own relational difficulties with each other).
**Structural Family Systems Theory: Early Findings**

The well-known family therapist Salvador Minuchin and his colleagues observed certain structural family dynamics and generational boundary-breaching patterns in families that they treated, whose children presented with varied symptoms. In his and colleagues’ work with families with at least one delinquent boy (*Families of the Slums*, Minuchin et al., 1967), Minuchin observed certain common patterns, which led him to qualify these families as “disorganized.” These families were characterized by much disengagement, in that parents were often unaware of their children’s whereabouts, even as the youths’ conduct problems escalated to a level that required the intervention of community authorities. Minuchin observed that these overwhelmed parents frequently abdicated their parental authority to their older children. In these families, communication between parents and children was often erratic, with parents and children not having established regular rules for how to talk to one another. Parent-child communication was often fragmented in that, when parents did turn their attention toward the children, their verbalizations and actions often appeared random, or at the most loosely related to what the children had said or done. Family members did not appear to expect other members to listen to them, and thus chose to express themselves by yelling. Minuchin also noted that spouses in these families related more to each other as co-parents than as husband and wife. Boundaries in these families were rigid and distant to the point that family members were not available to each other for needed support.

Minuchin and colleagues (*Psychosomatic Families*, 1978) also noted some common structural family patterns in the families of children with anorexia nervosa and
psychosomatically-related diabetes and asthma. In contrast to the disengaged boundaries exhibited in families of delinquent boys, these families of children with anorexia and psychosomatic symptoms were characterized by enmeshed boundaries. Family members did not allow each other much individual privacy, and parents did not often treat children as differentiated individuals. Overprotectiveness, mutual hypersensitivity to each other, and the eliciting of constant nurturing and protective responses from one or both parents also characterized these families, with parents’ overprotectiveness interfering with children’s development of autonomy and a sense of self. These families’ patterns were often so rigid that the family could not respond to changing times and circumstances, including the development of a child into an adolescent. A lack of conflict resolution was often present: in highly enmeshed families, where one person’s distress has quick and potent effects throughout the system, the family’s threshold for conflict remains low. Families would often maintain stability by conflict avoidance or by ineffective conflict resolution strategies, with the net result that they would not confront differences in a way which allowed for negotiation of a resolution.

In these families with very diffuse boundaries, Minuchin and colleagues observed that psychosomatic children were often involved in parent conflict, via triangulation, parent-child coalitions, or detouring. With triangulation, children appeared caught between their parents’ conflict such that any assertion on the part of the child involved siding with one parent over the other. In parent-child coalitions, the child was consistently allied with one parent against the other (these coalitions frequently took the form of mother joined with child against the father). When detouring was present, parents
submerged their marital conflicts by focusing their efforts on protecting the sick child rather than addressing their relational problems. In this way, children’s participation in parental conflict served to regulate the marital dyad, a process often related to stress in children as supported by physiological data. In psychosomatic families, the function that the children’s symptoms served for the family reinforced both the symptom and the family structure that maintained it.

Jay Haley (1980) also posited that adolescents’ and young adults’ symptoms and problem behaviors served an important function for their family systems. He hypothesized that, in continuing to have problems and failing to advance to the normal tasks of adulthood, a young person remained “at home” with his or her family, where he or she could continue to provide a stabilizing force. His viewpoint was similar to Minuchin’s in that he argued that an adolescent’s symptoms served a function for the family system, which in turn maintained the symptoms. Haley noted that when a young person would achieve some developmentally appropriate marker of success (e.g., financial independence), the family would suffer, the young person would relapse to mental illness or problematic behavior, and the system would stabilize. According to Haley, having an identified patient or a scapegoat in the family could help keep parents keep their marriage stable by allowing them to put their arguments aside to either discipline an identified patient who is misbehaving or to support an identified patient who is ill. A young-adult child with a substance abuse problem, for example, might detour a parents’ conflict because the parents will need to focus on that young-adult child’s behaviors.
Like Minuchin, Haley (1967) also noted the potential destructiveness of cross-generational triangles. According to Haley, families are made up of a certain number of family triangles (e.g., 56 possible triangles in a family with two parents, two children, and two grandparents on each parent’s side) with actions in one triangle felt throughout the family system. He defined a “perverse triangle” as one which contained a coalition of two members against a third, which the family members involved explicitly denied. A coalition differed from an alliance, in which two people united in a common interest not directed against a third person. Haley noted the high incidence of “perverse triangles” in families of young adults with schizophrenia. He also noted how behavior in one triad would have repercussions throughout other triads and subsystems of the family. For example, in schizophrenic families, the patient’s behavior relating to one parent would affect not only the other parent, but also the relationships of both parents with the patient’s grandparents, among others. Haley warned family therapists not to get caught up in triangles and coalitions.

Research on Structural Family Systems Theory

The main tenets of structural family systems theory arose from clinical observations and have been supported by subsequent research. A large and growing body of evidence exists suggesting that, consistent with structural family systems theories, family dynamics reflecting cross-generational boundary breaching are associated with a variety of youth problems. Recent studies have examined whole family-level variables such as enmeshment (e.g., Barber & Buehler, 1996; Davies, Cummings, & Winter, 2004), disengagement (e.g., Davies et al., 2004; Kerig, 1995), and children’s perceptions of
themselves as a family scapegoat (e.g., Yahav & Sharlin, 2002) and have shown these constructs to be related to internalizing and externalizing problems that presumably reflect poor self-regulation. Other studies have similarly found dyadic role reversals and triangulation of children and adolescents into parent conflicts to be related to child and adolescent internalizing and externalizing (concepts which are both relevant to dispositional self-regulation).

*Research on family-level constructs.* Some recent research has demonstrated associations between child and adolescent self-regulation and the family-level boundary disruptions inherent to enmeshment and disengagement. In a study assessing enmeshment and disengagement in the same sample, Davies, Cummings, and Winter (2004) used constructs derived from family systems theory to classify two-parent families with a kindergarten child as cohesive, enmeshed, or disengaged based on cluster analysis of mother and father reports of marital, parental, and parent-child functioning. Enmeshed families had high levels of both spousal hostility and spousal and parent-child affection, combined with inconsistent parental discipline thought to be indicative of insufficient role boundaries. Children in enmeshed families demonstrated the highest levels of distress of all the groups when exposed to a simulated parent argument, which may be indicative of the diffuse boundaries such that children experienced spousal discord as threatening to their own sense of security. Disengaged families had high levels of conflict, low levels of spousal and parent-child affection, and inconsistent discipline. Cohesive families had low hostility, high affection, and consistent discipline, with boundaries allowing the child access to his or her parents while preserving individual
autonomy. Classification of families as either enmeshed or disengaged was associated with parent reports of child internalizing and both parent and teacher reports of child externalizing one year later. (These associations were partly mediated by children’s reactions to interparental conflict during the simulated argument.) In another study of the effects of family variables, mothers in two-parent families with a 6- to 10- year old child who rated their family structure as “separate,” meaning that no family members were close to each other and similar to the construct of family-level disengagement, rated their children as higher in externalizing problems compared to mothers who rated their families as cohesive (or even triangulated or detouring) (Kerig, 1995). In another study of 471 adolescents, adolescent reports of family-level enmeshment were positively related to concurrent adolescent self-reports of aggression, withdrawal, and anxious/depressive symptoms (Barber & Buehler, 1996).

*Research on dyadic hierarchy or role reversals.* Other research has examined and found associations between hierarchical role reversals and a variety of problems, including drug abuse and conduct problems. In regards to dyadic boundary violations, using their self-developed Madanes Family Hierarchy Test (MFHT) wherein family members select the hierarchical organization that best applies to their family, Madanes, Dukes, and Harbin (1980) found higher incidences of reports of collapsed or reversed hierarchies in families of heroin addicts compared to matched controls without a psychiatric diagnosis and to families of individuals with schizophrenia. Madden and Harbin (1983) studied a sample of White male adolescents with the MFHT and found that those boys and young men with a violent history and their parents reported significantly
more hierarchical reversals than did the boys and young men without a violent history and their parents. In five of the 17 families with a violent son, at least one person reported that the son was in charge of both parents; none of the 12 families with a non-violent son reported this configuration. In a subsequent study using the MFHT to compare the family structure of families of active alcoholics, recovered alcoholics, and controls, members of families with an active alcoholic father selected more diagrams of collapsed or reversed hierarchies than did members of families with an alcoholic father considered to be recovered and members of families with no alcoholic family members (Preli & Protinsky, 1988). In another study using the MFHT to measure deviant hierarchies, Green, Loeber, and Lahey (1992) found higher reporting of deviant hierarchies in boys ages 7 to 12 with conduct problems compared to boys of the same age diagnosed with Overanxious Disorder, and also found that the young boys who had used tobacco, alcohol, or marijuana reported significantly higher incidences of deviant hierarchies than did young boys who had not used (79% of the boys reporting deviant hierarchies had used substances, compared to 49.6% of boys reporting traditional hierarchies).

More recent studies using verbal report in place of selecting a diagram found similar results with respect to higher incidences of reversed parent-child hierarchies in children and young adults with psychological problems. Women with anorexia reported higher levels of enmeshment, caretaking role reversals, and parental intrusiveness than did a group of control women (Rowa, Kerig, & Geller, 2001). In a longitudinal study following children from age 1.5 years to 10 years, Shaw, Criss, Schoenberg, and Beck (2004) found a link between mothers’ expectations of children’s roles vis-à-vis their
parents that indicated role reversal (e.g., beliefs that children should comfort their mother when she is feeling sad or should comfort both parents after the parents have argued) and children’s conduct problems at age 10. In another recent study of parent-child role reversals among mothers with a history of depression and their adolescent children, observer ratings of adolescent emotional caretaking (e.g., attending to parental distress) during interaction tasks with their mothers was found to be associated with self-reported anxiety and depression in these adolescents (Champion, Jaser, Reeslund, Simmons, Potts, Shears, & Compas, 2009).

Researchers have also paid increasing attention to the construct of parentification, which refers to a disruption in a family hierarchy such that a member of one generation (a child) is filling a role typically assigned to another generation (the parents), and is related to dyadic role reversals. It may be associated with adolescent perceptions of responsibility toward their parents in addition to behaviors indicative of role reversal. This construct has found support recently in that it has demonstrated relationships to marital conflict and to adolescents intervening in marital conflict. Responses to a recently developed adolescent-report measure of parentification (i.e., an adolescent’s perception that one or both parent figures relied emotionally on him or her) were associated with adolescent reports of their own internalizing and externalizing (Peris, Goeke-Morey, Cummings, & Emery, 2008).

Research on triadic boundary disruptions. With respect to triadic patterns and adolescent adjustment, triangulation of adolescents into dyadic parental conflict has also been shown to be related to early adolescent problem behavior and to be related to
adolescent internalizing and adjustment difficulties more generally. In one study, father-reported triangulation (but not mother-reported triangulation) was associated with adolescent depression (Wang & Crane, 2001). Wang and Crane (2001) also found that fathers’ marital satisfaction was associated with children’s depression only when the fathers perceived triangulation; when the fathers did not perceive triangulation, low father marital satisfaction was not associated with child depression. In a sample of college students, self-reported triangulation was associated with adjustment to college (measured with the College Maladjustment Scale of the Minnesota Multiphasic Personality Inventory) for undergraduate students with and without physical and cognitive disabilities (Smith, Ray, Wetchler, & Mihail, 1998). In a sample of families with 6- to 10 year old children, mothers and fathers who described the family structure as detouring (with children excluded from the parental subsystem) rated their children as highest in internalizing, externalizing, and total problems compared to mothers and fathers rating their families as cohesive (all members close), separate (all members distant), or triangulated (either a stable parent-child coalition or a shifting coalition) (Kerig, 1995).

Triangulation has also demonstrated relations to adolescent externalizing, as adolescents who are triangulated into parents’ conflict may act out more (and thus reduce the conflict - e.g., Davis, Hops, Albert, & Sheeber, 1998; Fosco & Grych, 2008). Bell, Bell, and Nakata (2001) found partial cross-cultural support for the destructive effects of parental triangulation of female adolescents in a sample of 99 U.S. and 60 Japanese families. Among adolescents ages 10 to 18 whose parents had separated 4.5 years prior, feeling caught between the two parents (e.g., being asked to carry messages from one
parent to the other, feeling like they could not talk about one parent in front of the other) was associated with self-reported depression, anxiety, and deviant behavior (Buchanan, Maccoby, & Dornbusch, 1991). Some recent research suggests that it may be an adolescent’s reaction to marital conflict, rather than the presence of conflict per se, that is related to adolescent problems. In one study, triangulation was related to increases in adolescents’ internalizing, even after controlling for marital hostility and adolescents’ externalizing behaviors. Buehler and Welsh (2009) found that an association between marital conflict and internalizing was partly mediated by increases in a tendency to react negatively to parental conflict. Findings such as these underscore the importance of studying interactional dynamics even when examining individual outcomes (e.g., adolescent internalizing).

Triangulation or involvement in parental conflict may also be related to families’ scapegoating of a child. For example, Yahav and Sharlin (2000, 2002) have investigated the role of what they call the “symptom-carrying child.” In their reports, children exhibiting either internalizing, externalizing, or both reported that they saw themselves as more responsible and involved in their parents’ marriages than did their non-symptomatic siblings. Internalizing and externalizing children were more likely than non-symptomatic children to use indirect means to stop parents’ arguments when they happened (e.g., behaving badly so that parents would turn from fighting each other toward dealing with the child).

Other studies have examined the associations between parent conflict, triangulation of an adolescent, and adolescent symptomatology in mediational and
predictive models. In a community sample, marital hostility predicted youth-perceived triangulation, which in turn predicted youth internalizing (Franck & Buehler, 2007). Other studies found that triangulation into parent conflict mediated the influence of parent conflict on adolescent internalizing and externalizing (Franck & Buehler, 2007; Grych, Raynor, & Fosco, 2004).

Some studies have compared ratings made of dyadic patterns and alliances to arrive at inferences regarding triadic patterns. In a study of structural constructs using observational methods, researchers comparing delinquent with well-adjusted adolescents (males and females ages 14-17) found delinquent adolescents to have higher levels of observed closeness with mothers and disengagement from fathers than their non-delinquent, non-mental health involved counterparts. They concluded that cross-generational coalitions were more frequent in families of delinquent than those of well-adjusted adolescents (Mann, Borduin, Henggeler, & Blaske, 1990). In a study involving ratings of audiotaped interactions, Gilbert, Christensen, & Margolin (1984) found that the marital alliance was relatively weaker in small samples (12 per group) of distressed vs. non-distressed families with a child aged 5 to 13. They also noted that, in these families, discrepancies between mothers’ and fathers’ alliances with the target child were common, and were, on average, twice as large in the distressed families as in the non-distressed families during a problem-solving task. In studies of college students, male college freshmen’s reports that a non-marital relationship was the primary or most important relationship in their family of origin distinguished those students on academic probation from their academically passing counterparts (Teyber, 1983a). Female undergraduates
from intact families reporting that a non-marital relationship was the most primary and important relationship in the family scored lower on a measure of identity achievement and higher on a measure of neuroticism than did female undergraduates reporting that their parents’ marital relationship was primary, as structural family systems theory would encourage for healthy family functioning (Teyber, 1983b). In their study comparing the family structure of families of active alcoholics, recovered alcoholics, and controls, Preli and Protinsky (1988) found that members of families with an active alcoholic father were more likely to report the primacy of a dyad in the family other than the mother-father dyad, compared to both families with an alcoholic father considered to be recovered, or families with no alcoholic family members. A contextual or situational view of adolescent self-regulation could take into account the apparent interrelatedness of triangulation, adolescent self-regulation, and adolescent internalizing and externalizing problems.

An SFST-Based View of Self-Regulation: Methodological Considerations

Family-level variables under study are often measured by using reports of family members, generally the adolescent and/or one parent figure. In cases where researchers employ reports from multiple family members (e.g., parent and child, mother and father), family members’ reports often evidence some disagreement, which suggests that reliance on one member’s perspective may miss other perspectives or key dynamics in the family. In relying on single-member reports or even in averaging multiple members’ reports to arrive at a family “score,” family-level variables may be conceptualized as family traits, rather than as dynamic, fluctuating states. Views of family dynamics as traits may
parallel the dispositional view of adolescent self-regulation, also often measured by self-report, which predominates in the extant literature. It is unusual to find a study with both adolescent- and family-level variables measured observationally from the same time point (e.g., observation of a family interacting with ratings of the whole-family, parent(s), adolescent(s), and any other relevant family members).

Since the early clinical observations of Minuchin, Haley, and colleagues, researchers have attempted to operationalize core structural family constructs, in addition to other family dynamics relevant to the problem under study. With an aim to providing empirical support for SFST’s ideas about the role of problematic family structure in youth problem maintenance, Robbins, Szapocznik, and colleagues at the University of Miami’s Center for Family Studies (Robbins, Hervis, Mitrani, & Szapocznik, 2001; Szapocznik, Rio, Hervis, Mitrani, Kurtines, & Faraci, 1991) developed the Structural Family Systems Ratings (SFSR) observational coding scheme to measure patterns in family interaction relevant to structural family theory, which are the foci of intervention in structural family therapy. Its developers designed it for use with videotapes of families performing structured interaction tasks, the instructions of which were developed by Minuchin and colleagues (1967) in their work with families of delinquent boys. The SFSR includes overall ratings, at the family level, for family structure, family boundaries, the developmental appropriateness of family roles, identified patienthood (defined as negativity directed toward the youth with the behavior problem, centrality of him or her in the family arguments, overprotection of him or her, and denial of family problems unrelated to him or her), and conflict resolution. Trained observers make these
measurements via bottom-up ratings of components of each construct. This measure has
demonstrated excellent inter-rater reliability and high internal consistency. This study
will use Minuchin and colleagues’ structured interaction tasks along with a coding
scheme based on the SFSR.

*The Question of Gender and Ethnicity*

Gender differences have historically been a mainstay in research on adolescents,
and family theorists and therapists are often interested in ethnic differences in family
functioning (e.g., Falicov, 1998; McGoldrick, Giordano, & Garcia-Preto, 2005). It is
possible that structural family systems patterns such as enmeshment, disengagement,
conflict avoidance, hierarchical role reversals, and cross-generational coalitions may be
differentially adaptive depending on adolescent gender and/or ethnicity. Some studies
suggest that gender and ethnicity may moderate associations between family constructs
and adolescent problem behavior, and therefore may moderate the relations of family
constructs to self-regulation. Of particular interest to the present study are variations by
gender and ethnicity in the adaptiveness or maladaptiveness of structural family systems
constructs.

Research on variations in constructs relevant to structural family systems theory
by adolescent gender is limited. With regard to non-structural family constructs, some
research studies suggest a moderating effect of gender, with family functioning (or
malfunctioning) more strongly associated with adolescent problems for girls than for
boys. Family conflict, inconsistent or harsh discipline, and low parental monitoring were
more detrimental to females than to males in a juvenile justice sample (Gavazzi, 2006). In
a study of 305 teens age 14 to 18, self-reported family factors, specifically family discord and disrupted parent-child relationships, were more strongly related to emotional distress in females than in males (Elizur, Spivak, Ofran, & Jacobs, 2007). Another study found that parent-reported family cohesion and adolescent-reported closeness with fathers was associated with friendships with deviant peers for female adolescents but not for their male counterparts (Werner & Silbereisen, 2003).

Other research with constructs not centrally relevant to SFST suggests that it may not be as much that girls have stronger associations between relationships and individual outcomes, but rather that boys and girls have different associations. For example, one study of family factors and depressive symptoms in girls and boys participating in the National Longitudinal Survey of Youth showed that family relationships were linked to depressive symptoms in both girls and boys (as predicted, girls had higher levels of depressive symptoms than boys did), but that specifics of parental relationships varied in importance for the two sexes: for girls, perceived mother support of father was more predictive of depression, whereas for boys, perceived father support of mother was more predictive of depression (Eshbaugh, 2008). Another study showed a moderating effect of family type (stepfamilies vs. non-stepfamilies) in that “inadequate” maternal monitoring was more strongly related to conduct problems for boys than girls in stepfather-families, and for girls than boys in non-stepfamilies (Kim, Hetherington, & Reiss, 1999). In a study of 228 urban minority adolescents, parental monitoring was found to be related to substance use differentially in adolescent boys vs. girls, depending on the substance in question (cigarettes vs. alcohol; Griffin, Botvin, Scheier, Diaz, & Miller, 2000).
Although research on structural family systems constructs and ethnicity is limited, there has been speculation about differential adaptiveness of SFST constructs by ethnicity. The cultural variant hypothesis (e.g., Allen, 1978; Peterson, 1986) posits that to evaluate the adaptiveness of certain patterns in families, a therapist or researcher must examine the fit between family structures and culture-specific norms. For example, intergenerational closeness may be more highly valued than marital closeness in cultures that place more importance on the extended family than does the dominant Anglo-American culture. To take some examples from structural family systems theory, parent-child coalitions may be less associated with child problems in Hispanic cultural groups that place more emphasis on extended kinship ties than does the dominant nuclear-family culture. A role reversal may be more problematic in cultures that emphasize respect for authority and tradition along with intergenerational bonds (Falicov, 1998).

Tests of the cultural variant hypothesis have been few and far between, and evidence in support of it has been mixed. For example, Peterson (1986) found that closeness in the primary parental dyad was more related to high functioning in Anglo-American than in African-American college students. However, these results were reduced to non-significance when she controlled for socio-economic status. In another study, Rohrbaugh and Peterson (1986) found no race x adjustment interactions between Anglo-American and African-American families with both high- and low-functioning adolescents. In both of these studies, however, race (Anglo- vs. African-American) served as the proxy measure of culture, whereas the construct of culture is believed to be multifaceted and to include components of ethnicity, nationality, attitudes, acculturation,
religion, and so on.

Subsequent studies have continued to produce mixed results with respect to the cultural variant hypothesis. Kasle, Limperis, Rohrbaugh, and Shoham (1995) found that boundary-breaching patterns were associated with decreased adjustment for both Anglo-American and Mexican-American college students. They did, however, find some differences with respect to student functioning and dyadic role reversals. Collapses of father-child role reversals were associated with lower anxiety for Anglo-Americans and higher anxiety for Mexican-Americans. On the other hand, reversals of caretaking roles were associated with lower depression for Mexican-Americans and higher depression for Anglo-Americans. Kasle (1997) did not find any differences between Anglo-American and Mexican-American college students with respect to the incidence of dyadic and triadic boundary-breaching patterns and various adjustment problems (depression, anxiety, help-seeking, academic problems, alcohol problems, food limiting problems, and conduct problems).

Recent research has produced tentative support for the cultural variant hypothesis with regard to adolescent substance use, though the need for more investigation precludes drawing firm conclusions. In a recent examination of cultural differences in the adaptiveness of structural family characteristics among substance-using adolescents, Rentscher, Lebensohn-Chialvo, Rohrbaugh, and Shoham (2010) found some differences between Hispanic (Mexican-American, Cuban-American, and Puerto Rican) vs. non-Hispanic (African-American and Caucasian) adolescents. Family enmeshment, as rated by observers, was negatively associated with substance use severity for Hispanic
adolescents but unassociated for African-American or Caucasian adolescents, suggesting that enmeshment, or some aspects of it, may have some adaptive functions in Hispanic adolescents but not in the other ethnic groups studied. Rentscher et al. (2010) also found that family conflict avoidance (again rated by observers) was positively associated with substance use severity among Hispanic adolescents, and unrelated to substance use severity among African-American and Caucasian adolescents, suggesting that conflict avoidance may be maladaptive in Hispanic adolescents only, at least when the outcome is substance use. It is not known whether these findings similarly generalize to self-regulation outcomes.

With respect to ethnicity as a moderator among SFST and non-SFST constructs, evidence is more mixed than it is for gender. For instance, one study found that disrupted cohesion and subsystem boundaries, as indicated by either a cross-generational or detouring coalition between two parents and a child, were more related to internalizing for European-American than for Hispanic children ages 8 to 12 (Lindahl, Malik, Kaczynski, & Simons, 2004). The authors hypothesized that Hispanic-American children may be more likely than European-American children to have extended family networks available to them, which may offer a protective effect. With both European-American and Hispanic-American children in this study, boundary disruptions mediated the association between imbalance of power in the parental relationship and child internalizing symptoms. Lindahl and Malik (1999) found that observed disengagement in mother-father-son triads during family interactions was positively associated with boys’ externalizing among Hispanic, Caucasian, and bi-ethnic families with no apparent
moderation. In another study, retrospectively reported behavioral control and family affective involvement predicted anxiety symptoms in European-American but not African-American college students (Chapman & Woodruff-Borden, 2009).

With some exceptions (e.g., Lindahl & Malik, 1999; Lindahl, Malik, Kaczynski, & Simons, 2004; Rentscher et al., 2010), much of the research on family functioning and ethnicity, as with family functioning and adolescent gender, has been conducted with non-structural family constructs, such as parenting style. In the same study described above, Lindahl and Malik (1999) found that hierarchical parenting, in which one or both parents was observed to hold authority in triadic interactions, was associated with boys’ externalizing in European-American and bi-ethnic families but not in Hispanic families, and that lax and inconsistent parenting, in which neither parent was observed to hold control in family interactions, was problematic for Hispanic and European-American participants. (“Democratic” parenting, in which all family members worked together to discuss a family problem and parents encouraged the child’s autonomous thinking, was observed to be most adaptive for all families.) Dearing (2004) found that, among adolescents living in high-crime neighborhoods, a restrictive parenting style was positively related to academic performance among African-American teenagers, but negatively related to academic performance for European-American teenagers. Parenting styles may be related to adolescent outcomes differently depending on the ethnic background of the adolescent and family. In a study of bullying, living with two biological parents was protective against bullying perpetration and victimization for Caucasian, but not Hispanic or African-American, children in grades six through ten
(Spriggs, Ianotti, Nansel, & Haynie, 2007). In looking at family-level variables using adolescent report, Herman, Ostrander, and Tucker (2007) found that low family cohesion was associated with depression for African-American adolescents, while high family conflict was associated with depression for European-American adolescents. High self-discrepancy was a mediator of this association for European-American but not for African-American adolescents. These studies used self-report for adolescent variables.

Some studies of ethnicity moderation did not find any moderating influence. For example, Bray, Adams, Getz, and Baer (2001) found no evidence of ethnic moderation in White and Mexican-American adolescents in terms of individuation and family conflict on alcohol use. Gorman-Smith, Tolan, Henry, and Florsheim (2000) find that controlling for income, the relations between family functioning and adolescent internalizing and externalizing were similar across ethnic groups, a finding which, along with Peterson’s (1986) finding that racial differences disappeared when statistically controlling for SES, points to the importance of attending to potential confounding variables overinflating the apparent effects of demographic factors.

As with studies of the associations between family relationships and adolescent outcomes, in studies of gender and ethnicity moderation, adolescent variables have been measured by adolescent or parent report. Most of family variables have similarly been measured with self-report of either the parent or the adolescent, though the more structurally-based Lindahl and Malik studies often used their SCIFF and SCID systems to code family and couple interaction, respectively. Observational methods offer some advantages, including the ability to attend to situational factors relevant to behavior
maintenance and to capture family interaction dynamics that may be difficult for family members to describe in self-reports.

*Purpose and Context of the Present Study*

This study builds on the National Institute of Drug Abuse (NIDA) Clinical Trials Network (CTN) protocol CTN-0014 (Brief Strategic Therapy for Adolescent Drug Abusers). The parent study involved a clinical trial of Brief Strategic Family Therapy (BSFT; Szapocznik, Hervis, & Schwartz, 2003) in a multi-ethnic sample of adolescents referred for substance abuse treatment at eight community agencies in the continental United States and Puerto Rico. Although the parent study included self-report and direct observational assessment of adolescent and family functioning over a one-year period, the present study focuses primarily on observational data collected during a series of family interaction tasks at the pre-treatment baseline.

To examine the proposed contextual nature of self-regulation by adolescent drug users, the current study focuses on co-variation between (un-)regulated youth behavior and specific structural patterns (namely, those highlighted by structural family systems theory) during a sequence of three family interaction tasks. Three independent teams of observers watched the videotapes and reliably coded (a) the adolescent drug user’s self-regulation during each task in the interrelated domains of attention, behavior, emotion, and initiation; (b) specific structural family systems patterns related to Szapocznik et al.’s (1991) rating scheme, with specific foci on anomalies of the generation boundary (Rohrbaugh, Hasler, Lebensohn-Chialvo, & Shoham, 2007); and c) the overall quality of family functioning based on the Global Assessment of Relational Functioning (GARF)
scale. Identified patient adolescents also completed the Youth Self Report (YSR; Achenbach & Rescorla, 2001), and both the adolescent and a consenting parent described the adolescent’s behavior using parallel forms of the Diagnostic Interview Schedule for Children (DISC-IV) Predictive Scales (Internalizing and Externalizing). Examination of the associations between adolescent self-regulation and specific structural family process variables can contribute to understanding of the more general contextual nature of adolescent self-regulation.

The purpose of the present study is to examine associations of adolescent self-regulation with aspects of the relational context, namely, with specific structural family systems variables, in observed family interaction. Of particular interest is the structural systems hypothesis that compromised adolescent self-regulation reflects problematic family relations that cross generational boundaries or detour family conflict (Minuchin, 1974; Haley, 1986). Specifically, this study will examine (a) the family-level constructs of enmeshment, disengagement, conflict avoidance, and identified patienthood (i.e., the degree of blame placed on the adolescent drug user); (b) dyadic measures of parent-child role reversal of support and control; and (c) family triangles. These variables will be examined for any association with self-regulation controlling for global measures of family functioning and other relevant covariates, to facilitate understanding of which specific aspects of family interaction may be most strongly related to adolescent self-regulation beyond global measures of how well or poorly a family appears to function during these tasks. This study will also examine whether any of these associations are moderated by adolescent gender, ethnicity, or task instructions.
Preliminary Research Questions

1. How does adolescent self-regulation, as observed during family interactions, relate to self- and parent-report, disposition-based measures of the same construct? Correlational analyses will test these associations. Overall observer-rated situational adolescent self-regulation is expected to evidence small associations with trait-based, self- and parent-report measures of self-regulation. Observer-rated behavioral regulation is expected to evidence moderate associations with trait-based measures of externalizing, and observer-rated emotional regulation is expected to evidence moderate associations with trait-based measures of internalizing.

2. How stable is observer-rated adolescent self-regulation across the three tasks? Changes in adolescent self-regulation as task instructions change would lend support to a situational, context-specific view of the construct. Descriptive statistics will examine mean levels of adolescent self-regulation across the three tasks, and correlations will test the strength of associations of adolescent self-regulation from one task to the next.

Main Research Questions

1. Is adolescent self-regulation related to structural family systems variables during observed family interaction tasks, such that, taken together, structural variables explain a significant proportion of variation in observed ASR? Are these relations in the direction that structural family systems theory would predict? Specific
structural phenomena to be tested are: family-level enmeshment, family-level disengagement, family-level conflict avoidance, family-level identified patienthood, parent-child triangles, sibling triangles, parent-child support role reversal, parent-child control role reversal, and outside triangles (family triangles involving a family member who is not present for the task). Adolescent self-regulation is expected to demonstrate significant negative relations to at least several of the variables. To answer this question, data analytic strategies include examining case-level associations with adolescent self-regulation and structural family variable scores aggregated across the three family interaction tasks. Multiple regressions will examine multivariate associations between adolescent self-regulation and these structural family systems variables, which will be examined as a variable block, with and without statistical control of potential confounding variables. Individual beta weights for the structural variables can provide information about which structural variables contribute the most to the overall variance explained by the structural variable block.

2. Are there task variations in the associations between structural variables and adolescent self-regulation? Multilevel modeling (MLM) analyses will examine more fine-grained associations between adolescent self-regulation and structural patterns across the three tasks, to test any changes in the strength or direction of associations across tasks. MLM analyses will examine these associations individually, examining any changes in the association of each structural pattern with adolescent self-regulation over the different tasks. Given that there is likely
considerable conceptual and empirical overlap between the various structural family systems constructs, separate analyses allow for closer examination of the changes in each structural variable, taking into account trends across the tasks.

3. Does adolescent gender or ethnicity moderate any associations between ASR and structural family variables, including associations of family variables across tasks? Given the mixed evidence for moderation of adolescent outcomes by gender and ethnicity found in the literature, these analyses are exploratory in nature with no definitive hypotheses advanced about the direction of any moderating relations.
METHOD

Participants

Participants for the current study were 458 adolescents, ages 12-17, from eight community treatment agencies across the continental United States and Puerto Rico. Participants eligible for the parent study had to have either self-reported use of illicit drugs other than alcohol and tobacco in the 30-day period preceding their baseline assessment, or have been referred for substance abuse treatment. The majority of adolescents (72%) were referred for treatment from the juvenile justice system. Of 480 adolescents initially recruited into the parent study, 458 adolescents (360 male and 98 female) completed the standardized interaction tasks with their families at baseline and thus had observational data on ASR and family variables available for the study. The mean age of adolescent identified patients (IPs) was 15.98 years (SD = 1.23 years), with ages ranging from 12 to 18. Adolescents identified as 44% Hispanic, 31% White, 23% African American, and 8% Native American. Among those self-reporting as Hispanic, 39% were Mexican-American, 18% Cuban-American, 27% Puerto Rican, and 16% other Hispanic. Parents and parental figures were, on average, 43.5 years old (SD = 8.2 years), though their ages ranged from 22 to 71. Forty-seven percent of households were single-parent-headed, and 25% consisted of both biological parents living with the identified patient. There were no significant differences on demographic variables between the 458 adolescents who participated in the family interaction tasks and the 22 adolescents and

3 Participating sites were La Frontera (Tucson, AZ), The Crossroads Center (Cincinnati, OH), The Village (Miami, FL), Gateway Community Services (Jacksonville, FL), Administracion de Servicios de Salud Mental y Contra la Adiccion (ASSMCA, Bayamon, PR), Daymark Recovery Services (Salisbury, NC), Tarzana Treatment Centers (Tarzana, CA), and Arapahoe House (Denver, CO). Sites volunteered to participate from within the NIDA Clinical Trials Network.
their families recruited into the study who did not participate in the tasks.

 Procedures

 Baseline Assessment of the Adolescent and Consenting Parent

 Before any family began treatment, research assistants (RAs) collected self-report measures of adolescent self-regulation, internalizing, and externalizing during initial visits to each family’s home at the beginning of the study. Research assistants administered the Youth Self-Report (Achenbach & Rescorla, 2000), which includes sections on Internalizing, Externalizing, and Total Problems, to the adolescent identified patient. Additionally, RAs administered the Diagnostic Interview Schedule for Children – 4th edition (DISC-IV) predictive scales for internalizing and externalizing to both the adolescent and at least one parent figure. A parent figure in the adolescent's family or household also participated in some study assessments of adolescent functioning, and provided demographic data used in several analyses. Parents reporting on the adolescent’s behavior consisted of 84% women and 16% men. Subsequent to this baseline assessment, RAs also administered and videotaped a structured family interaction task, referred to as the Family Interaction Assessment Task (FIAT). FIATs took place at the family’s home (59% of cases), in the treatment program or agency office (37% of cases), or in other locations, such as a family business (4% of cases).

 Administration of Family Interaction Assessment Tasks (FIATs)

 The structured family interaction assessment tasks (FIATs) originated in Salvador Minuchin et al.’s Wiltwyck “Families of the Slums” project (Minuchin, Montalvo, Guerney, Rosman, & Schumer, 1967). They consisted of three standardized tasks for
family members to carry out together. Tasks were as follows: 1) plan a dinner menu, 2) discuss likes and dislikes about people in the family, and 3) discuss a recent argument. After families consented to participation in the parent study, research assistants worked with the parent(s) to identify family members who should participate in the FIAT. At a minimum, the adolescent identified patient and at least one parent figure were required to participate. Beyond the two of them, the tasks could include as many or as few others as the families wished. Research assistants overseeing data collection were instructed to encourage the inclusion of any family members in the household over the age of six, and any other adult outside the household (e.g., biological parent living outside the home, aunt, uncle, grandparent, boyfriend or girlfriend of a custodial parent) who played an important role in parenting the IP and for whom participation was possible. RAs then scheduled the FIAT administration with the family at a time that would allow the key family members to participate.

Research assistants administered the FIATs in a location of the family’s choosing, usually either the family’s home or in an agency office. Family interaction tasks included an average of 3.5 members (SD = 1.57, range 2-16), with 29.5% of the tasks involving single parent-child dyads. Nearly two-thirds of the interaction tasks (64.8%) had only one parent figure participating. Two biological parents participated in 17.4% of the interaction tasks, with the remaining 17.8% of tasks involving two parent figures, at least one of whom was not a biological parent. At least one sibling participated in 55.5% of the FIATs, 12.7% included a stepparent, and 11.6% included a grandparent. Other family

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4 Verbatim instructions for these tasks appear in APPENDIX B.
members included additional parents, aunts, uncles, cousins, and romantic partners of other family members. On average, families completed the interaction tasks in 11.23 minutes (SD = 6.83 minutes, maximum 51.2 minutes). The RAs administering the FIAT videotaped the family interactions and sent the videotapes to the University of Arizona for coding. At the University of Arizona, trained coders made ratings of the family interaction tapes, using the Adolescent Self-Regulation (ASR), Global Structural Family Systems Ratings (GSFSR), and Global Assessment of Relational Functioning (GARF) schemes, to be described below.

**Observational Coding Procedures**

Descriptions of the procedures for the observational coding of the constructs under study, namely adolescent self-regulation, structural family systems variables, and global family functioning, appear in the subsequent paragraphs.

*Adolescent self-regulation.* To measure regulated adolescent behavior in the context of observed family interaction, a team of University of Arizona investigators developed an observational rating scale based on a review of the ASR literature. The team identified four dimensions or sub-constructs of self-regulation relevant to adolescents and to the parameters of the FIATs. These dimensions are: (a) Task Focus, (b) Behavioral Regulation, (c) Emotional Regulation, and (d) Initiation and Participation. Ratings of each ASR sub-construct ranged from 1 to 9, with higher scores indicating better observer-rated self-regulation. This dimensional approach allowed coders to note degrees of each type of regulation, as well as the prevalence of a given pattern throughout the task vs. isolated incidents of good or poor regulation. The rating anchors that the
raters used as guides in assigning numerical values appear in APPENDIX A.

The basic corps of raters of adolescent self-regulation consisted of eight University of Arizona undergraduate research assistants, two of whom were fluent in both English and Spanish. Raters underwent two weeks of training on the use of the ASR rating scale. After the initial training sessions, raters completed a practice cohort of FIATs, which trainers assessed for inter-rater reliability and for agreement with trainers’ ratings. Ratings began when the group of raters achieved an adequate level of inter-rater reliability (above .70). Raters made ratings separately for each of the three FIAT tasks (planning a menu, discussing likes and dislikes, discussing a family argument). Each FIAT was assigned to at least two raters. When the two raters rating the same FIAT were discrepant by more than two points on the nine-point scale, they met to watch the tape jointly and resolve the discrepancy. Raters completed their ratings in a laboratory at the University of Arizona. Project investigators conducted inter-rater reliability checks regularly, and held periodic training meetings throughout the course of the project to ensure that raters were consistently and correctly applying the ASR constructs in making their ratings.

*Structural family systems variables.* The raters of specific structural family variables were nine University of Arizona graduate student research assistants, one of whom was fluent in both English and Spanish. The rater team made ratings from each family videotape of each of the following constructs: enmeshment, disengagement, conflict avoidance, support role reversal, control role reversal, “identified patienthood,”
outside triangles, parent-child triangles, and sibling triangles. Raters completed ratings of each construct separately for each of the FIAT tasks. Prior to rating FIATs, each of these raters underwent two weeks of training, during which they achieved adequate inter-rater reliability with trainers’ “gold standard” ratings of 12 practice FIATs. Inter-rater reliability checks continued throughout the trial and, whenever ratings for a construct diverged by two or more points (on a five-point scale), the relevant coders met to resolve the discrepancy. The raters attended weekly supervisory meetings to ensure consistency in applying the GSFSR constructs. At least two coders independently rated all FIATs with the exception of the Spanish-language FIATs.

*Global family functioning.* Ratings for global family functioning were conducted by a team of five undergraduate research assistants at the University of Arizona, two of whom were fluent in both English and Spanish, using the Global Assessment of Relational Functioning (GARF) scale. As with ASR ratings, at least two raters coded each FIAT. Unlike the ASR and GSFSR, raters made their ratings based on the entire FIAT, rather than separately for each task. After the initial training sessions, raters completed a training cohort of FIATs, which project investigators assessed for inter-rater reliability and for agreement with trainers’ ratings. When raters achieved an adequate level of inter-rater reliability, they were assigned a cohort of FIATs to rate, with each FIAT assigned to at least two raters. If two raters were divergent by more than 20 points (on a 100-point scale) in their ratings of family functioning, they met to watch the tape jointly and resolve the discrepancy. If they were unable to reach consensus, an expert

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5 Complete descriptions of these constructs appear in APPENDIX C.
panel of project investigators would watch the tape and decide on an appropriate rating.

**Constructs and Measures**

**Context-Specific Adolescent Self-Regulation**

Raters completed ratings of four dimensions of adolescent self-regulation for each of the three FIAT tasks. Those four dimensions were task focus, behavioral regulation, emotional regulation, and initiation and participation. At least two independent raters provided ratings for each FIAT, and each score reflected the mean of those raters’ scores.

**Task focus.** The Task Focus dimension relates to cognitive and attention regulation. Adolescents received low task focus scores when they exhibited inattention or appeared easily distracted from the FIAT instructions and/or from emergent tasks defined by family interaction (e.g., parental direction). (This last caveat was added to account for those FIATs in which a parent figure, rather than the IP, diverged from the tasks of the instructions, in which case the adolescent would not be penalized in the ratings of self-regulation if he or she were following a parent’s lead. However, if another sibling deviated and the IP showed decreased focus in combination with the sibling, but in contrast to the parent figure(s), then he or she would be rated as lower in task focus.)

**Behavioral regulation.** The Behavioral Regulation dimension of self-regulation was designed to reflect the adolescent’s tendency to select and apply appropriate behaviors. The low end of the continuum reflected IP behaviors that suggested in-the-moment impulsivity or impatience, e.g., an adolescent blurting words out, shifting topics abruptly, or fidgeting in his or her seat. Adolescents were rated high in behavioral regulation if they exhibited behavior that was appropriate to the social context (e.g.,
waiting his or her turn to speak, remaining relatively still in his or her seat, not acting out in a way that distracted others).

*Emotional regulation.* The Emotional Regulation dimension of self-regulation reflected the appropriateness of adolescents’ emotional expressions during the FIAT. Those adolescents rated low in emotional regulation exhibited affect that was incongruent with social context in either type (e.g., giggling when the occasion called for seriousness) or intensity (e.g., flat affect, angry or tearful outbursts, overreactions to small problems) and/or rapidly shifting emotional expression. Adolescents with affect that was appropriate to the situation in both type and intensity were given high ratings on emotional regulation.

*Initiation and participation.* The Initiation and Participation dimension of self-regulation assessed the degree of connection that the adolescents showed to the task and to other family members. Adolescents who appeared non-responsive and disengaged from other members who were more active in participating in the tasks received low ratings; adolescents who participated fully in the interaction and initiated interactions with other family members received high ratings. Adolescents who did not initiate interactions, but who participated agreeably when other family members addressed them, received scores in the mid-range on this scale.

The observed ASR sub-constructs tended to correlate highly ($rs > .68$), thus supporting their combination into a composite measure reflecting overall adolescent self-regulation. A composite measure of self-regulation, reflecting all four components (task focus, behavioral regulation, emotional regulation, and initiation and participation) was
created from ratings of the four components for each task separately, thus providing a measure of overall self-regulation for Task 1, another measure of overall adolescent self-regulation for Task 2, and another for Task 3. Another composite combined data from each of the four sub-constructs across the three tasks, resulting in a final adolescent self-regulation score. In general, adolescents received fairly high ratings of self-regulation. The mean ASR composite rating for the full sample was 6.35 ($SD = 1.26$). Means for the ASR components were as follows: Task Focus 6.74 ($SD = 1.40$), Behavioral Regulation 6.31 ($SD = 1.30$), Emotional Regulation 6.38 ($SD = 1.42$), and Initiation and Participation 5.99 ($SD = 1.74$). These ratings indicate that raters tended to code adolescents as above the scale midpoint on all dimensions, and thus to rate them as more regulated than unregulated. The overall ASR scale had a Cronbach’s alpha of .88, demonstrating internal consistency. Dropping ASR components (Task Focus, Behavioral Regulation, Emotional Regulation, and Initiation and Participation) from the overall ASR scale had very little effect on the overall alpha.

*Structural Family Systems Patterns*

Observer ratings of structural family dynamics came from the Global Structural Family Systems (GSFSR) coding scheme. The GSFSR is adapted from the Structural Family Systems Ratings (SFSR) system developed at the University of Miami’s Center for Family Studies (Hervis, Szapocznik, Mitrani, Rio, & Kurtines, 1991; Robbins, Hervis, Mitrani, & Szapocznik, 2001; Szapocznik, Rio, Hervis, Mitrani, Kurtines, & Faraci, 1991). The GSFSR was developed with an aim to simplify the SFSR and to disentangle observations of occurrences during the observed interaction from normative judgments of
family functioning (although some GSFSR descriptions remain inherently normative by design). One key difference between the SFSR and the GSFSR is that the SFSR involves micro-level, bottom-up ratings of structural family systems variables, whereas the GSFSR involves top-down, global ratings. For example, one construct that both the SFSR and GSFSR measure is one that the Miami team termed “identified patienthood.” It refers to a family’s tendency to blame the family’s problems on the adolescent identified patient referred for treatment. In making ratings of this construct, the SFSR involves making ratings of various components (e.g., negativity about the adolescent identified patient, centrality of the identified patient in family discussions, overprotection or over-nurturance of the identified patient, and denial of family’s problems not caused by the identified patient), whereas the GSFSR involves making global ratings of identified patienthood without parsing apart its components. Like the SFSR, the GSFSR provides observational ratings of how families interact, in this study when they perform the three standardized tasks. Results from GSFSR development suggest that trained raters can just as reliably code global indicators of structural family systems constructs as they can specific indicators of those constructs (Hasler, Rohrbaugh, Shoham & Barona, 2006).

The GSFSR includes ratings made at the whole-family, dyadic, and triadic levels. First-order ratings were made on a scale from 1 to 5, with higher scores representing higher incidences of a construct. Although raters provided scores for each construct for each task, and thus task scores for each construct were available, the team combined some first-order GSFSR ratings to yield family-level ratings for the main analyses. At least two independent raters provided ratings for each FIAT, and each structural family
systems variable score reflected the mean of raters’ scores. Brief descriptions of the GSFSR structural family systems variables used in the present study follow, and more comprehensive descriptions appear in APPENDIX C.

**Enmeshment.** A pattern of enmeshment refers to a high level of interpersonal connectedness in the family, regardless of how many family members are present. It is associated with diffuse boundaries between family members and with low interpersonal differentiation. Ratings of enmeshment used for analysis were derived from the means of family-level and any available adolescent-parent dyadic (adolescent-mother, adolescent-father) ratings of enmeshment for each task.

**Disengagement.** Disengagement is characterized by a low level of interpersonal connectedness in the family. Here the boundaries are relatively impermeable and often associated with emotional distance. As much as possible, raters rated disengagement independently of warmth/affection and hostility/criticism. Ratings of disengagement used for analysis were derived from the means of family-level and any available adolescent-parent dyadic (adolescent-mother, adolescent-father) ratings of disengagement for each task.

**Conflict avoidance.** Conflict avoidance refers to the tendency of a family as a group to avoid or minimize conflicts or disagreements among family members. Ratings of conflict avoidance used for analysis were derived from a mean of conflict avoidance ratings across the three tasks.

**Support role reversal.** Support role reversal refers to the extent to which, in a parent-child dyad, the child provides nurturance or emotional support to the parent more
than vice versa. These scores ranged from 1 (no support role reversal, all support observed is from parent to child) to 3 (parent and child support each other equally) to 5 (complete role reversal, all support observed is from child to parent). Scores of 2 and 4 indicate that both support each other, but one supports the other more than vice versa (scores of 2 indicate that the parent provides more support to the child than the child does to the parent, scores of 4 indicate that the child provides more support to the parent than the parent does to the child). Instances of support role reversal (i.e., scores greater than 3) were rare, occurring in only 5.9% of the cases observed, and the maximum overall support role reversal score was 3.7. Because coders noted relatively few instances of role reversal, support role reversal scores that averaged out to below 3 were set equal to 2.5 to accommodate the skewed range of scores; thus, support role reversal scores in the final analyses were set to range from 2.5 to 5. If two parents participated, ratings for support role reversal used in analyses were derived from the maximum of the mother-adolescent and father-adolescent ratings across tasks, to fully capture the extent of role reversal observed during the FIAT in a given family.

*Control role reversal.* Control role reversal refers to the extent to which, in a parent-child dyad, the child defines reality more than a parent does, or tells a parent what to do more than the parent does so to the child. As with support role reversal, these scores ranged from 1 (no control role reversal, all control observed is from parent to child) to 3 (parent and child share control equally) to 5 (complete role reversal, all control observed is from child to parent). Scores of 2 and 4 indicate that both parent and child share control, but one controls the other more than vice versa (scores of 2 indicate that the
parent wields greater control, scores of 4 indicate that the child does). As with support role reversal, instances of control role reversal (i.e., scores greater than 3) were rare (though more common than with support role reversal), occurring in only 14.4% of the cases observed, with the maximum overall control role reversal score at 4.7. Because coders noted relatively few instances of role reversal, control role reversal scores that averaged out to below 3 were set equal to 2.5 to accommodate the skewed range of scores; thus, control role reversal scores in the final analyses were set to range from 2.5 to 5. If two parents participated, ratings for control role reversal used in analyses were derived from the maximum of the mother-adolescent and father-adolescent ratings across tasks, to fully capture the extent of role reversal observed during the FIAT in a given family.

*Identified patienthood.* Identified patienthood (IPhood) refers to the extent that the family tends to localize problems in the identified patient (IP), here, the adolescent referred for treatment. Identified patienthood ratings used in analyses were derived from the mean of IPhood ratings across tasks.

*Outside triangles.* Outside triangles refer to cross-generation triangles involving family members who did not participate in the FIAT. For example, a mother and adolescent may complain together about a father who is not present, or a child may defend an absent parent against criticism from the participating parent. Outside triangles, unlike the other cross-generation triangle patterns, can be identified and rated when only two family members participate in the FIAT. Outside triangle ratings used in analyses were derived from the mean of outside triangle ratings across tasks.
Parent-child triangles. Measures of parent-child triangles for the present study were derived from comparisons of dyadic alliances between the adolescent, the mother figure, and the father figure as observed in the family interaction task. Ratings of parent-child triangles were thus only available when two parent figures participated in the FIAT. GSFSR raters made ratings of the relative strength of the dyadic alliances between the IP and each participating parent, as well as between the two parents themselves if they both participated. A positive alliance between members of a dyad is characterized by cohesion, reciprocity, and respect. An absence of positive alliance can be characterized by either emotional distance and disengagement, or conflict and negativity. Raters coded positive alliances independently of hierarchical arrangements such as the reversal of parent-child roles. Parent-child triangle scores were computed by subtracting the stronger parent-adolescent alliance score from the mother-father alliance score.

Sibling triangles. Sibling triangles refer to cross-generational coalitions in which either the IP joins with one parent figure against or to the exclusion of the sibling, or in which a sibling joins with a parent figure against or to the exclusion of the IP. These coalitions can be explicit, as when one parent and the sibling actively side with each other against the IP, or implicit, as when the excluded sibling appears almost to be a "third wheel," with the primary dyad ignoring or disregarding their opinions and suggestions. These coalitions can also be relatively stable or can be unstable or competing, with the IP or a sibling caught in between two other family members.

Global Family Functioning

The Global Assessment of Relational Functioning (GARF) scale applies the ideas
inherent in the Global Assessment of Functioning (GAF) scale, which appears in the DSM-IV-TR, beyond the individual to a system of relationships. The GARF scale was developed by the Committee on the Family of the Group for the Advancement of Psychiatry. Like the GAF, the GARF presents a continuum from 1-100 indicating a range from pathology (lower levels) to healthy functioning (higher levels). It includes three domains of functioning derived from extant conceptual models of family functioning: joint problem solving, organization, and emotional climate. In methodological studies, the GARF has demonstrated good inter-rater reliability, as well as versatility in its application to a wide range of families (Group for the Advancement of Psychiatry Committee on the Family, 1996). Reliability coefficients computed for all pairs of coders over common cases indicated satisfactory inter-judge agreement, with kappas consistently above .60.

*Dispositional Adolescent Self-Regulation*

Three data sources relevant to dispositional adolescent self-regulation – two from the adolescent and one from a parent figure – were available from the parent study baseline assessment. These were the Youth Self-Report (YSR; Achenbach & Rescorla, 2001), completed by the adolescent identified patient, and the Diagnostic Interview Schedule for Children – 4th edition (DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), completed by the adolescent identified patient and one of his or her parents.

The Youth Self-Report (YSR) is typically self-administered, but here was administered by a research assistant in interview format. Youth provided ratings for a variety of competence and problem items, rating themselves for how true each item was
at the present moment or in the past six months. The YSR also includes open-ended responses to items covering physical problems, concerns, and strengths. The main YSR indicator of dispositional ASR in the present study was the Total Problems Scale, which has shown strong reliability, validity, and cross-cultural generalizability across many studies (e.g., Rescorla, Achenbach, Ivanova, Dumenci, Almqvist, Bilenberg, Bird, et al., 2007). The YSR Total Problems Scale has had high internal consistency in the present sample (alpha > .90). To validate this scale as a measure of dispositional ASR, the team asked the first author of a leading review paper on ASR (Crockett, Moilanen, Raffaeli, & Randall, 2006) to identify YSR items theoretically consistent with portrayals of self-regulation in the literature. The 39 items this expert identified were themselves internally consistent (alpha = .89) and when combined, correlated highly with the YSR Total Problems Scale (r = .91).

The Diagnostic Interview Schedule for Children – 4th edition (DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000) is a structured clinical interview, designed for use by non-clinicians to assess more than 30 psychiatric disorders in children and adolescents. It includes parallel versions for youth self-report and parent (or knowledgeable caretaker) report about the youth. The predictive scales (Lucas, Zhang, Fisher, Shaffer, Regier, Narrow, et al., 2001) were designed to identify adolescents likely to meet diagnoses for various types of disorders, including internalizing and externalizing. In the present study, predictive scales for both internalizing and externalizing, each from both an adolescent report and a report from a consenting parental figure, were available. Internal consistency (alpha) coefficients were high (>
.90) for both reporters on both dimensions.

**Potential Moderator and Control Variables**

Adolescent characteristics such as sex, ethnicity, family income, family composition, and baseline drug use were available from parent reports at baseline. These variables were examined as potential covariates of family variables and adolescent self-regulation, and added to subsequent regression equations if found to be significantly associated with ASR. Other potential covariates included FIAT task variables such as the number of family participants, the number of parent figures present, FIAT duration, and whether the observational assessment occurred in the agency or in the family’s home.

Separate ASR and GSFSR ratings were available for each task, and task instructions (i.e., planning a dinner, discussing likes and dislikes about others in the family, discussing a recent family argument) were examined as a potentially important moderator of associations between structural patterns and observed adolescent self-regulation.
RESULTS

Before getting to the main question about associations between structural family systems patterns and observed adolescent self-regulation, this paper will present preliminary sections on (a) associations between observed (situational) and reported (dispositional) ASR, (b) task variations in observed ASR and structural family interaction patterns, and (c) other task and demographic correlates of ASR and the structural patterns. Subsequent to the presentation of these preliminary analyses will be the main analyses, namely, reports on the associations between structural family dynamics and situational adolescent self-regulation. The report of the main analyses will cover (a) univariate and multivariate associations between self-regulation and constructs relevant to structural family systems theory (SFST), (b) associations between adolescent self-regulation and structural family dynamics, accounting for global family functioning and other covariates, (c) multilevel analyses of task effects, and (d) moderation by adolescent sex and ethnicity.

Associations Between Observed (Situational) and Reported (Dispositional) Adolescent Self-Regulation

Correlational analyses tested the relations between the observational, situational adolescent self-regulation measure developed for this study, and self-report, dispositionally-based measures of the self-regulation trait, namely the Total Problems Scale of the Youth Self-Report (YSR) and the DISC-IV Predictive Scales for internalizing and externalizing, rated separately for the adolescent by both the adolescent and a parent figure. These correlations appear in Table 1. The composite observational
measure of self-regulation, which combined scores from the four components of ASR, as rated from the family interaction tasks (FIATs), evidenced small correlations with the previously established, self-report measures of dispositional self-regulation used in the study. These correlations remained small when the composite measure of self-regulation was separated by task (task 1 = plan a menu, task 2 = discuss likes and dislikes about others in the family, task 3 = discuss a family argument). Thus, situational ASR was only minimally related to trait, self-report measures of ASR.

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>YSR Total Problems Scale</th>
<th>DISC Internalizing – Adolescent Ratings</th>
<th>DISC Externalizing – Adolescent Ratings</th>
<th>DISC Internalizing – Parent Ratings</th>
<th>DISC Externalizing – Parent Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASR Composite</td>
<td>-.03</td>
<td>.05</td>
<td>.03</td>
<td>.01</td>
<td>-.06</td>
</tr>
<tr>
<td>ASR Task Focus</td>
<td>-.01</td>
<td>.06</td>
<td>.03</td>
<td>.03</td>
<td>-.05</td>
</tr>
<tr>
<td>ASR Behavioral Regulation</td>
<td>-.10</td>
<td>-.02</td>
<td>-.09</td>
<td>-.06</td>
<td>-.13**</td>
</tr>
<tr>
<td>ASR Emotional Regulation</td>
<td>-.07</td>
<td>.03</td>
<td>-.04</td>
<td>-.03</td>
<td>-.08</td>
</tr>
<tr>
<td>ASR Initiation and Participation</td>
<td>.06</td>
<td>.08</td>
<td>.15**</td>
<td>.07</td>
<td>.04</td>
</tr>
</tbody>
</table>

*Note. *p < .05, **p < .01, ***p < .001

With respect to specific components of adolescent self-regulation, it was expected that the observational measure of behavioral regulation would correspond moderately to self- and parent-report measures of externalizing, while the observational measure of emotional regulation would correspond moderately to self- and parent-report measures of internalizing. The observational measure of behavioral regulation correlated significantly with measures of externalizing as expected. These correlations were negative given that
the context-specific measure developed for this study assigns higher scores for better regulation (i.e., less externalizing) whereas the self-report measures assign higher scores for more externalizing. Correlations among the dispositional measures of total problems and of internalizing and externalizing were all significant at $p < .001$, regardless of whether the adolescent or a parent figure provided the rating. A full table of correlations among the dispositional measures of adolescent self-regulation appears in APPENDIX D.

**Task Variations in Observed Adolescent Self-Regulation and Structural Family Systems Variables**

Although adolescent self-regulation showed high rank-order stability across discussion topics ($r > .67, r = .76$ between Task 1 and Task 2, $r = .81$ between Task 2 and Task 3, $r = .68$ between Task 1 and Task 3), mean levels of observed ASR decreased markedly from the first menu task, to the second “likes and dislikes” task, to the third task of discussing a family argument, evidencing a significant ($p < .001$) linear trend. The tasks appeared to elicit increasing levels of conflict, as expected; indeed, observer ratings of family-level negative affect increased across the three tasks (on a scale from 1-5, with higher scores indicating more negative affect: Task 1: $M = 2.30, SD = 0.66$; Task 2: $M = 2.90, SD = 0.72$; Task 3: $M = 3.41, SD = 0.77$), and this increase evidenced a significant linear ($p < .001$) trend. The decrease in observer-rated adolescent self-regulation across tasks demonstrates the relevance of task parameters to self-regulation and provides evidence for a context-based, dynamic view of self-regulation. Means and standard deviations for adolescent self-regulation, separated by task, appear in Table 2, along with repeated measures ANOVA F values for within-subject task effects.
Descriptive statistics also examined mean levels of variables relevant to structural family systems theory (SFST) across the three tasks. For the most part, structural family systems variables showed gradual increases across the three tasks. Disengagement, conflict avoidance, identified patienthood, and outside triangles increased in their mean levels from Task 1 to Task 2 and peaked in Task 3, evidencing significant linear trends. Control role reversal evidenced the opposite pattern, showing the most elevated levels in the dinner-planning task and the lowest levels when families discussed an argument, although these differences were small and not statistically significant. Enmeshment was lowest in Task 1 and highest in Task 2, and support role reversal was lowest in Task 2 and highest in Task 3; both variables evidenced significant quadratic trends. Means and standard deviations for the structural family variables, separated by task, appear in Table 2, along with repeated measures ANOVA F values for within-subject task effects.
Table 2

ASR and Structural Family Variables – Means Across Tasks – Full Sample (n = 458)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Task 1 Mean (SD)</th>
<th>Task 2 Mean (SD)</th>
<th>Task 3 Mean (SD)</th>
<th>Task F ratio</th>
<th>Task Linear Trend</th>
<th>Task Quadratic Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASR</td>
<td>6.75 (1.33)</td>
<td>6.33 (1.35)</td>
<td>5.97 (1.47)</td>
<td>147.29***</td>
<td>221.20***</td>
<td>.45</td>
</tr>
<tr>
<td>Enmeshment</td>
<td>2.35 (.77)</td>
<td>2.50 (.75)</td>
<td>2.41 (.77)</td>
<td>12.67***</td>
<td>3.30†</td>
<td>28.25***</td>
</tr>
<tr>
<td>Disengagement</td>
<td>1.71 (.75)</td>
<td>1.89 (.80)</td>
<td>2.05 (.83)</td>
<td>64.64***</td>
<td>96.97***</td>
<td>.18</td>
</tr>
<tr>
<td>Conflict avoidance</td>
<td>1.87 (.70)</td>
<td>2.87 (.81)</td>
<td>2.94 (.83)</td>
<td>396.11***</td>
<td>552.67***</td>
<td>171.00***</td>
</tr>
<tr>
<td>Support role reversal</td>
<td>2.74 (.29)</td>
<td>2.70 (.33)</td>
<td>2.74 (.31)</td>
<td>3.86*</td>
<td>.26</td>
<td>7.38**</td>
</tr>
<tr>
<td>Control role reversal</td>
<td>2.78 (.47)</td>
<td>2.76 (.45)</td>
<td>2.75 (.45)</td>
<td>1.04</td>
<td>1.47</td>
<td>.40</td>
</tr>
<tr>
<td>Identified patienthood</td>
<td>1.06 (.28)</td>
<td>2.38 (.94)</td>
<td>3.11 (1.27)</td>
<td>782.74***</td>
<td>1188.89***</td>
<td>56.41***</td>
</tr>
<tr>
<td>Outside triangles</td>
<td>1.01 (.05)</td>
<td>1.20 (.58)</td>
<td>1.27 (.76)</td>
<td>37.49***</td>
<td>56.21***</td>
<td>7.39**</td>
</tr>
</tbody>
</table>

Note. ASR = adolescent self-regulation. Task linear and quadratic trends represent F values.
†p < .10, *p < .05, **p < .01, ***p < .001.

Other Correlates of ASR and Structural Family Relations

Correlational analyses tested associations between adolescent self-regulation and various demographic and task variables. It was important to identify potential confounding variables that could explain associations between ASR and structural family systems variables. Overall adolescent self-regulation was not significantly related to adolescent gender, age, or ethnic group, or family income; to substance use extent, severity, or diagnosis; to adolescent school outcomes such as dropping out or being expelled; or to adolescent report of inpatient or outpatient psychiatric treatment history or various indices of criminal behavior such as having been arrested, detained, or convicted.

Subsequent regression analyses included these variables as covariates to account for their contribution to associations between adolescent self-regulation and structural family systems variables.
of a crime. Adolescent self-regulation evidenced significant positive relations to parental history of substance abuse treatment \((r = .13, p < .01)\) and to both parents’ having smoked cigarettes in the past 30 days (both parents \(r = .18, p < .001\), mother \(r = .17, p = .001\), father \(r = .25, p = .03\)). It was also significantly positively related to a mother’s having used alcohol in the past 30 days \((r = .13, p = .01)\) though it was unrelated to her having been intoxicated during this time). Overall, there was a tendency for adolescents with substance-using parents to receive higher ratings of self-regulation during the observed interaction tasks. Adolescent self-regulation was negatively related to the number of household members \((r = -.11, p < .05)\) and negatively related to living with two biological parents \((r = -.13, p < .01)\).

Correlational analyses also examined associations with adolescent self-regulation and aspects of the family interaction tasks. Adolescent self-regulation correlated negatively with number of participants \((r = -.19, p < .001)\), and was significantly and negatively associated with the presence of two parent figures \((r = -.11, p < .05)\) compared to one parent figure. Overall ASR scores were significantly negatively related to the participation of any sibling. This effect of decreasing ASR with increased number of participants was apparent across the three sets of task instructions (plan a menu, discuss likes and dislikes, discuss a family argument) as well. Adolescents completing the family interaction tasks in their homes \((59\%, N = 269)\) were not statistically different in their mean ASR composite scores than adolescents completing their family interaction tasks in an agency or office \((37\%, N = 168)\).
Correlational analyses tested the associations of structural family systems variables with demographic variables. Female adolescents were rated higher in control role reversal ($r = .15, p = .001$) and lower in identified patienthood ($r = -.11, p < .05$) than their male counterparts. Other structural family systems variables did not significantly differ by gender. With the exception of support role reversal, structural family systems variables were unrelated to adolescent age. Adolescent age and support role reversal were positively correlated ($r = .10, p < .05$), demonstrating that older adolescents were more likely to provide more support to a parent figure than that parent figure did to them. In general, Hispanic adolescents demonstrated more enmeshment and more role reversals than non-Hispanic adolescents. African-American adolescents evidenced less enmeshment, less conflict avoidance, fewer role reversals, and less identified patienthood. White adolescents had less enmeshment and less conflict avoidance. Family income was not significantly associated with any of the structural variables except for sibling triangles, which were negatively correlated with income ($r = -.14, p < .05$). The presence of two biological parents in the home was associated with more disengagement ($r = .20, p < .001$), more support role reversal ($r = .09, p < .05$), and more identified patienthood ($r = .13, p < .01$), whereas being part of a blended family was associated with less conflict avoidance ($r = -.12, p < .05$). Identified patienthood was the only structural variable consistently associated with substance use outcomes; it was associated with greater extent and severity of use of tobacco, alcohol, marijuana, and other drugs. It also demonstrated some surprising negative associations with legal history, namely with adolescents’ having been arrested, detained, and convicted. School outcomes (e.g.,
whether an adolescent attended school, dropped out, or had been suspended or expelled) correlated in the expected direction with structural family systems variables, demonstrating some significant associations with disengagement, conflict avoidance, identified patienthood, and the presence of sibling triangles. Structural family systems variables were largely unrelated to adolescents’ having received substance abuse treatment prior to initiation of the study. Parental substance use was, in general, associated with less disengagement and less identified patienthood. Additionally, having a parent with a substance use problem was associated with more outside triangles ($r = .10, p < .05$).

Number of participants also demonstrated some associations with structural family variables; correlations appear in Table 3. It was significantly and negatively related to both identified patienthood and to outside triangles. With more family members participating in the family interaction task, there were decreased incidences of blaming discussions aimed at the adolescent substance user. Additionally, with more family members involved, there were fewer outside triangles, or family triangles involving non-participating family members (these types of triangles were often identified by discussions centered on the non-participating member, particularly in Task 3 when families were instructed to discuss a recent family argument). Number of participants was also correlated positively with enmeshment, disengagement, and support role reversal.

Correlational analyses tested the associations of adolescent self-regulation and structural family systems variables with a global measure of family functioning (observer-rated GARF). If ASR were found to be significantly associated with this
measure, then it would be included as a control variable to assess whether specific structural family variables contributed to situational self-regulation above and beyond the influence of this global measure of the quality of family functioning. These correlations appear in Table 3. Global family functioning evidenced a significant positive association with adolescent self-regulation, such that adolescents whose families were rated as functioning better also received higher individual ratings of self-regulation. Global family functioning was significantly negatively related to specific structural family systems constructs believed to have adverse consequences for adolescents, namely, to disengagement, conflict avoidance, support role reversal, control role reversal, and identified patienthood. Perhaps surprisingly, it was not significantly related to enmeshment, outside triangles, or parent-child triangles, and its negative association with sibling triangles approached but did not reach significance. Global family functioning was not significantly related to number of participants in a task ($r = .01$).

Due to their statistically significant associations with adolescent self-regulation and the structural family variables (with the exceptions of conflict avoidance and control role reversal), number of participants and global family functioning were included in subsequent regression models examining the relation of ASR to family variables. Given that adolescent self-regulation did not correlate significantly with any of the demographic variables examined, number of participants and global family functioning were planned to be the only control variables in the regression equations with structural family variables.
Table 3

Correlations of Study Variables with Covariates

<table>
<thead>
<tr>
<th>Structural family variables</th>
<th>No. of participants</th>
<th>Global family functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent self-regulation</td>
<td>-.19***</td>
<td>.34***</td>
</tr>
<tr>
<td>Enmeshment</td>
<td>.15**</td>
<td>.08</td>
</tr>
<tr>
<td>Disengagement</td>
<td>.13**</td>
<td>-.30***</td>
</tr>
<tr>
<td>Conflict avoidance</td>
<td>-.04</td>
<td>-.32***</td>
</tr>
<tr>
<td>Support role reversal</td>
<td>.19***</td>
<td>-.11*</td>
</tr>
<tr>
<td>Control role reversal</td>
<td>.01</td>
<td>.28***</td>
</tr>
<tr>
<td>Identified patienthood</td>
<td>-.14**</td>
<td>-.15**</td>
</tr>
<tr>
<td>Outside triangles</td>
<td>-.19***</td>
<td>-.03</td>
</tr>
<tr>
<td>Parent-child triangles (N=151)</td>
<td>-.17*</td>
<td>.05</td>
</tr>
<tr>
<td>Sibling triangles (N=263)</td>
<td>-.17**</td>
<td>-.12*</td>
</tr>
</tbody>
</table>

Note. + p < .10, * p < .05, ** p < .01, *** p < .001, all tests two-tailed.

The following section will present (a) univariate associations among adolescent self-regulation and structural family variables, (b) multivariate associations between adolescent self-regulation and structural family variables, both with and without the control variables of global family functioning and number of participants; (c) multilevel analyses of task effects on these associations and (d) tests of moderation of ASR-structural variable relations by adolescent sex and ethnicity.

Univariate Associations Among Adolescent Self-Regulation and Family Variables

Correlations among the various family variables, measured observationally, are presented in Table 4. Due to the high correlations among the four components of adolescent self-regulation only, the composite ASR measure appears in these analyses.

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7 Task focus had the same pattern of significance of correlations as did the composite measure. All components of self-regulation had significant relations to disengagement (negative), conflict avoidance (negative), identified patienthood (negative), outside triangles (positive), and parent-child triangles (positive). All components except behavioral regulation were significantly positively related to
Overall adolescent self-regulation evidenced significant relations to global family functioning (positive), enmeshment (positive), disengagement (negative), conflict avoidance (negative), identified patienthood (negative), outside triangles (positive), and parent-child triangles (positive). Within the structural family variables measured, several demonstrated significant relations to each other. Specifically, enmeshment (a tendency toward excessive closeness) showed significant negative relations with disengagement and with conflict avoidance, and significant positive relations with various parent-adolescent role reversals and family triangles. Disengagement (a tendency toward disconnection or distance) was positively related to conflict avoidance and to parent-child control role reversal, i.e., situations in which an adolescent tells a parent what to do or defines reality to a greater extent than the parent does. Disengagement demonstrated significant negative relations to parent-child triangles. Conflict avoidance demonstrated significant positive relations to parent-adolescent control role reversal and to identified patienthood. Families that tended to avoid conflict were more likely to have an adolescent demonstrate relational control of a parent, but also to place a larger share of blame for the family’s problems on the adolescent referred for treatment. Identified patienthood was significantly negatively related to parent-adolescent support role reversal and significantly positively related to sibling triangles, e.g., in which a parent figure and a sibling appear to form a coalition against or to the exclusion of the identified patient adolescent.

enmeshment, and all except for task focus were significantly related to control role reversal (behavioral and emotional regulation negatively, initiation and participation positively).
Table 4

Zero-order correlations among observational measures of ASR and family functioning

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adolescent self-regulation</td>
<td>-</td>
<td>.22***</td>
<td>-.60***</td>
<td>-.36***</td>
<td>.07</td>
<td>-.07</td>
<td>-.12**</td>
<td>.19***</td>
<td>.37***</td>
<td>-.07</td>
<td>.34***</td>
<td>457</td>
</tr>
<tr>
<td>2. Enmeshment</td>
<td>-</td>
<td>-.43***</td>
<td>-.14**</td>
<td>.24***</td>
<td>.09*</td>
<td>-.01</td>
<td>.16***</td>
<td>.21**</td>
<td>.17**</td>
<td>.08</td>
<td>.458</td>
<td></td>
</tr>
<tr>
<td>3. Disengagement</td>
<td>-</td>
<td>.46***</td>
<td>.02</td>
<td>.12*</td>
<td>.20***</td>
<td>-.20***</td>
<td>-.30***</td>
<td>.01</td>
<td>-.30***</td>
<td>.458</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Conflict avoidance</td>
<td>-</td>
<td>.06</td>
<td>.15**</td>
<td>.10*</td>
<td>-.00</td>
<td>.05</td>
<td>.32***</td>
<td>151</td>
<td></td>
<td>263</td>
<td>.458</td>
<td></td>
</tr>
<tr>
<td>5. Support role reversal</td>
<td>-</td>
<td>-.36***</td>
<td>-.11*</td>
<td>.09*</td>
<td>.12</td>
<td>-.05</td>
<td>-.11*</td>
<td>.458</td>
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<td></td>
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</tr>
<tr>
<td>6. Control role reversal</td>
<td>-</td>
<td>-.01</td>
<td>-.01</td>
<td>.03</td>
<td>-.05</td>
<td>.05</td>
<td>.28***</td>
<td>458</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Identified patienthood</td>
<td>-</td>
<td>-</td>
<td>-.09*</td>
<td>-.08</td>
<td>.39***</td>
<td>-.15**</td>
<td>.458</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Outside triangles</td>
<td>-</td>
<td>-</td>
<td>.01</td>
<td>.19**</td>
<td>-.03</td>
<td>.458</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Parent-child triangles</td>
<td>-</td>
<td>-</td>
<td>-.20*</td>
<td>.05</td>
<td>151</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10. Sibling triangles</td>
<td>-</td>
<td>-</td>
<td>-.12*</td>
<td>263</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>11. Global family functioning</td>
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<td>-</td>
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<td>456</td>
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</tr>
</tbody>
</table>

Note. *p < .10, *p < .05, **p < .01, ***p < .001, all tests two-tailed.
As previously noted, the observer-rated global measure of the quality of family functioning (GARF) correlated significantly and positively with adolescent self-regulation. Global family functioning correlated significantly and negatively with certain structural family systems variables, namely disengagement, conflict avoidance, support and control role reversal, and identified patienthood, and approached significance for cross-generational sibling triangles.

**Multivariate Associations Among Adolescent Self-Regulation and Family Variables**

The relations of adolescent self-regulation to structural family systems variables represented the heart of the study. These relations were tested with multiple regressions, all with ASR as the outcome variable. Predictor variables tested were: (a) enmeshment, (b) disengagement, (c) conflict avoidance, (d) support role reversal, (e) control role reversal, (f) identified patienthood, (g) outside triangles, (h) parent-child triangles, and (i) sibling triangles. The regression analyses tested the significance of $R^2$s for the structural variables as a block as well as the beta weights of the specific variables, with the latter indicating which structural constructs are most salient in predicting adolescent self-regulation.

Multiple regressions examined the structural family systems variables (enmeshment, disengagement, conflict avoidance, support role reversal, control role reversal, identified patienthood, and outside triangles) as predictor variables, with adolescent self-regulation as the dependent variable, in multiple regression analyses. These regressions were run on the full sample of participants, as well as two subsamples: the subsample of adolescents for whom two parent figures participated in the FIAT ($N =$
151, 32.5% of the total sample), and the subsample of adolescents for whom at least one sibling participated in the FIAT (N = 263, 55.5% of the sample). In the subsample with two parent figures, parent-child triangle ratings were included among the structural predictor variables. In the subsample of adolescents for whom at least one sibling participated, sibling triangle ratings were included among the structural predictor variables. Results of these analyses appear in Table 5, where zero-order correlations between each structural variable and adolescent self-regulation appear in the first column. Data appear separately for each of the three samples (the full sample, the subsample with two parent figures, and the subsample with at least one sibling). For each subsample, the first column contains beta values for a regression equation with only the structural variables as predictors, and the second column contains beta values when the two covariates, number of participants and global family functioning, were entered into the model. Values for the overall variance explained by each block (R\(^2\)) appear in the last row of each list of variables (structural family systems variables and control variables).

Taken together, the structural variables explained a significant amount of variation in observer-rated, situational adolescent self-regulation. Data from regression equations for the full sample, with the seven structural variables (enmeshment, disengagement, conflict avoidance, support role reversal, control role reversal, identified patienthood, and outside triangles) as predictors and adolescent self-regulation as the outcome variable, appear in the first three columns in Table 5. The overall R\(^2\) of .38 indicates that variation in the structural variables explained 38% of the variation in ASR, and did so above and beyond the variation explained by the covariates, which together
evidenced an overall $R^2$ of .04, explaining 4% of the variation in ASR, when added to the model in the full sample (both blocks of variables were statistically significant at $p < .001$). Examination of the standardized regression coefficients then revealed which structural variables contributed uniquely to the overall $R^2$ of .38 (note that the high degree of multicollinearity among the structural variables makes their interpretation difficult).
Table 5

Summary of regression results for structural family systems variables predicting adolescent self-regulation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Full sample (max N=457)</th>
<th>Two parent sample (max N=151)</th>
<th>Sibling sample (max N=263)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>Structural variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enmeshment</td>
<td>.22***</td>
<td>-.08*</td>
<td>- .04</td>
</tr>
<tr>
<td>Disengagement</td>
<td>-.60***</td>
<td>-.56***</td>
<td>-.49***</td>
</tr>
<tr>
<td>Conflict avoidance</td>
<td>-.36***</td>
<td>-.12**</td>
<td>-.10*</td>
</tr>
<tr>
<td>Support role reversal</td>
<td>.07</td>
<td>.11**</td>
<td>.14**</td>
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<tr>
<td>Control role reversal</td>
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<td>Identified patienthood</td>
<td>-.12**</td>
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<td>.02</td>
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<tr>
<td>Outside triangles</td>
<td>.19***</td>
<td>.09*</td>
<td>.07*</td>
</tr>
<tr>
<td>Parent-child triangles</td>
<td>.37***</td>
<td>.22**</td>
<td>.20**</td>
</tr>
<tr>
<td>Sibling triangles</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.38***</td>
<td>.28***</td>
<td>.36***</td>
</tr>
<tr>
<td>Control variables</td>
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<td>Number of participants</td>
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</tr>
<tr>
<td>Global family functioning</td>
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<td>.19***</td>
<td>.15*</td>
</tr>
<tr>
<td>R²</td>
<td>.04***</td>
<td>.03*</td>
<td>.03**</td>
</tr>
</tbody>
</table>

Note. Model 1 = regression with adolescent self-regulation as the outcome variable and the relevant structural variables as predictors. Model 2 = regression with adolescent self-regulation as the outcome variable and the structural variables and control variables as predictors in two separate blocks (a structural variable block and a control variable block). *p < .10, **p < .05, ***p < .01, ****p < .001.
Adolescent self-regulation evidenced significant zero-order correlations with enmeshment (positive), disengagement (negative), conflict avoidance (negative), identified patienthood (negative), and outside triangles (positive). Neither enmeshment nor outside triangles remained significantly associated with ASR when other structural variables and covariates were taken into account, although outside triangles did retain a significant positive association to adolescent self-regulation when examined simultaneously with the other structural variables without the covariates. Adolescent self-regulation remained significantly negatively associated with both disengagement and conflict avoidance, even with covariates added into the model. Better self-regulation was associated with decreased incidences of disengagement and of family members’ use of conflict avoidance strategies. Adolescent self-regulation was no longer negatively associated with identified patienthood with the other structural variables in the model, suggesting that the other structural variables accounted for at least some of the association between ASR and identified patienthood. Adolescent self-regulation was not significantly associated with either type of role reversal (support or control), although support role reversal emerged as a significant positive predictor when examined with the other structural variables and with the control variables.

Data from regression equations for the subsample of adolescents with two parent figures participating, with eight structural variables (enmeshment, disengagement, conflict avoidance, support role reversal, control role reversal, identified patienthood, outside triangles, and parent-child triangles) as predictors and adolescent self-regulation as the outcome variable, appear in the fourth and fifth columns of Table 5. Parent-child
triangles were operationalized as the differences between the stronger of the dyadic IP-parent alliances (i.e., the IP-mother figure or the IP-father figure alliance) and the alliance between the two parents themselves, as rated by observers. The sample for this equation was 151 adolescents with whom two parent figures participated in the FIAT. The overall \( R^2 \) of .36 indicated that the structural variables explained variation in ASR above and beyond the variation explained by the covariates, which together evidenced an overall \( R^2 \) of .03 when added to the model in the subsample of adolescents with two parent figures participating. Taken together, this finding indicated that variations in structural variables explained 36% of the variation in adolescent self-regulation.

Adolescent self-regulation was significantly negatively associated with disengagement and significantly positively associated with parent-child triangles, even when examined with the other structural variables and with the controls. Adolescent self-regulation evidenced a significant association with conflict avoidance in a regression with the other structural variables, which was reduced to a trend with the covariates in the model. This latter finding suggests that one or both of the covariates accounted for some of the association between adolescent self-regulation and conflict avoidance. Unlike with the full sample of adolescents, in this subsample, self-regulation was not significantly associated with support role reversal, identified patienthood, or outside triangles. As with the full sample of adolescents, in this subsample, self-regulation was not significantly associated with enmeshment or control role reversal in the multiple regression equations.

Within the subsample of adolescents for whom at least one sibling participated, the structural variable block evidenced an overall \( R^2 \) of .43, with variation in structural
variables together explaining 43% of the variation in adolescent self-regulation. As with the full sample, in this subsample, adolescent self-regulation had a significant negative association with disengagement and a significant positive association with support role reversal, both with and without covariates in the model. Adolescent self-regulation evidenced significant negative relations to conflict avoidance, though these associations were reduced to a trend when the control variables were added to the model. Adolescent self-regulation was not significantly associated with enmeshment, control role reversal, identified patienthood, outside triangles, or with cross-generational triangles involving a sibling.

**Multilevel Analyses of Associations Between ASR and Structural Variables by Task**

Multilevel modeling (MLM) analyses examined within-individual changes in the relations of ASR to each structural family systems variable as task parameters changed across the three study tasks. The question that MLM analyses sought to answer was: Do the associations between ASR and structural variables change when task instructions change? Evidence of significant changes would provide support for the relevance of task parameters to self-regulation and evidence for a context-based, dynamic view of self-regulation.

To examine how ASR related to each structural pattern across the three tasks, the task variable was re-coded as Time, with 0 = Task 1, 1 = Task 2, and 2 = Task 3, thus using Task 1 as the baseline index of Time. A fixed effects model examined the overall

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8 These three tasks were hypothesized to elicit increasing levels of conflict, a prediction borne out by linear increases in observer-rated family-level negative affect across the three tasks. While negative affect increased across tasks, mean levels of adolescent self-regulation decreased in a linear fashion across tasks from the first, menu task \((M = 6.75, SD = 1.33)\) to the second “likes and dislikes” task \((M = 6.33, SD = 1.35)\) to the third task of discussing a family argument \((M = 5.97, SD = 1.47)\).
trajectory of ASR over time, with Time (task) as a Level 1 predictor and the various structural variables as time-varying covariates at Level 1. This analysis revealed a significant overall linear trend for Time ($B = -0.39, SE = 0.03, p < 0.001$), such that the advancement to the next task was, on balance, associated with a .39 unit decrease in ASR scores (along the 1-9 scale that raters used). Separate regression equations, one regression equation for each structural family systems variable, then examined the relations of the various structural variables to adolescent self-regulation in conjunction with time, providing information about within-subject linear trends of structural variables across tasks. A significant interaction between a structural variable and time (e.g., disengagement x time) indicates that the structural variable (e.g., disengagement) was differentially related to adolescent self-regulation scores, depending on the task. Each regression included ASR as the dependent variable, with time, each structural variable, and a structural variable x time interaction for each structural variable as predictors in separate equations.

Significant main effects were evident for enmeshment ($B = 0.14, p = 0.01$), disengagement ($B = -0.68, p < 0.001$), conflict avoidance ($B = -0.21, p < 0.001$), and identified patienthood ($B = -0.13, p = 0.001$). These findings closely approximated the findings for zero-order correlations represented in Table 5, in which the above-mentioned structural variables demonstrated significant associations with ASR. In addition to the significant main effect for enmeshment, significant relations to ASR were evident for a time x enmeshment interaction ($B = -0.08, p = 0.03$), such that changes in adolescent self-regulation across tasks varied according to level of enmeshment. Figure 1 illustrates the
relations of enmeshment to adolescent self-regulation by depicting variations in ASR scores when enmeshment is high (i.e., one standard deviation above the mean) vs. low (i.e., one standard deviation below the mean) across the three tasks. Lower levels of enmeshment were associated with decreasing ASR across the three tasks (a finding consistent with the general tendency of ASR to decrease across the three tasks), whereas higher levels of enmeshment were associated with increasing ASR across the three tasks. There was also a near-significant interaction between control role reversal and time ($B = -.10, p = .09$) with higher levels of control role reversal associated with increasing self-regulation across tasks, and lower levels of control role reversal (i.e., a parent maintaining more control than the adolescent) associated with decreasing self-regulation across tasks.
Higher levels of enmeshment were associated with increasing levels of self-regulation across the three tasks, whereas lower levels of enmeshment were associated with decreasing levels of self-regulation across the three tasks.

With respect to outside triangles, although outside triangles did not have a significant main effect in the multilevel model (in contrast to the significant positive zero-order $r$ of outside triangles with ASR), the interaction between time and outside triangles ($B = .13$, $SE = .06$, $p = .04$) was significant when outside triangles were examined separately as a predictor of adolescent self-regulation. This finding indicated that the association between adolescent self-regulation and outside triangles changed as tasks advanced; they were positively associated in Tasks 2 and 3 but not in Task 1. Figure 2 illustrates this association. Interactions between time and the remainder of the structural
variables (disengagement, conflict avoidance, support role reversal, identified patienthood, and outside triangles) were non-significant. Although disengagement and conflict avoidance were both negatively related to ASR when examined at the case (family) level, and demonstrated significant main effects in MLM analyses, these associations did not vary across the three tasks.

![Graph](image)

**Figure 2.** Outside triangles and time (task). In the first task, outside triangles were negatively associated with self-regulation. This association disappeared in the second task and reversed in the third task, in which higher levels of outside triangles became associated with better self-regulation scores.

**Possible Moderation by Adolescent Sex and Ethnicity**

To explore variations by adolescent sex and ethnicity, tests of statistical moderation by adolescent gender (male, female) and ethnicity (Hispanic, African-American, and Caucasian) ethnic groups were conducted. Separate analyses for four dichotomized moderators (male vs. female IP, Hispanic vs. other ethnic groups, African-
American vs. other ethnic groups, and Caucasian vs. other ethnic groups) tested associations with each of the structural variables.

To test for moderation by gender, the structural variables (enmeshment, disengagement, conflict avoidance, support role reversal, control role reversal, identified patienthood, outside triangles, parent-child triangles, and sibling triangles) were each centered around their means, and interaction terms for each centered structural variable were created by multiplying the centered variable by gender (0 = male, 1 = female). When examined separately as predictors of adolescent self-regulation, the only gender x structural-process interaction terms that demonstrated statistical significance were the conflict avoidance x gender ($\beta = -.15, p = .003$), control role reversal x gender ($\beta = -.12, p = .05$), and sibling triangle x gender ($\beta = -.15, p = .03$) terms. Conflict avoidance was more negatively associated with adolescent self-regulation for female ($r = -.57, p < .001$) than for male ($r = -.27, p < .001$) adolescents. Control role reversal was unrelated to ASR for males ($r = -.01$), and negatively related for females ($r = -.25, p = .01$). Sibling triangles were negatively associated with adolescent self-regulation for females ($r = -.33$) but unrelated for males ($r = .00$). (Note that the finding that sibling triangles were largely non-significant in the full sample appears to be due to its non-significance for male adolescents, who made up the majority – 79% of adolescents in the sample.) Gender also did not interact with number of participants in predicting ASR. Using a Fisher’s Z transformation, significant differences were detected between males and females with respect to associations of ASR with conflict avoidance ($z = -.34, p < .001$), control role reversal ($z = -2.13, p < .05$), and sibling triangles ($z = -2.97, p < .001$). Simple slopes
analyses revealed that, for both male and female adolescents, the associations of conflict avoidance with ASR were significantly different from zero: for males, $t(454) = -5.85, p < .001$, for females, $t(454) = -6.70, p < .001$. Simple slopes analyses revealed that the associations with control role reversal and with sibling triangles were significant for female adolescents but non-significant for male adolescents (control role reversal: for males, $t(454) = -.02$, ns, for females, $t(454) = -2.74, p < .01$; sibling triangles: for males, $t(261) = .01$, ns, for females, $t(261) = -2.45, p = .01$).

To test for moderation by ethnicity, centered variables for the structural family systems constructs were multiplied with contrast codes for each of the three most common ethnic groups (Hispanic – which included Mexican-American, Cuban-American, Puerto Rican, and “other Hispanic,” African-American, and White). There was a trend for a support role reversal x Hispanic adolescent interaction ($\beta = .13, p = .07$), such that support role reversal was positively associated with adolescent self-regulation for Hispanic adolescents ($r = .16, p = .02$) but not significantly related to adolescent self-regulation for non-Hispanic adolescents ($r = .02$). There was also a trend for sibling triangle x Hispanic adolescent interaction ($p = .07$); there was a trend for sibling triangles to be negatively related to ASR among Hispanic ($r = -.16, p = .08$) adolescents, but this association was non-significant among non-Hispanic ($r = .01, p = .87$) adolescents. In general, moderation by gender and ethnicity was minimal and restricted to three of nine constructs (in the case of gender) and two constructs at the trend level (in the case of ethnicity).
DISCUSSION

Observer-rated adolescent self-regulation, which was only weakly related to self-reported trait-based adolescent self-regulation, demonstrated associations with structural family systems variables, sometimes in unexpected ways. Most of these findings remained even after controlling for a global measure of family functioning, suggesting that specific structural variables relate to ASR above and beyond a measure of how well or poorly a family functions in general. Adolescent self-regulation was negatively associated with number of family members participating in a task, providing further evidence for the importance of context to manifestations of a phenomenon believed to reside within the self. With some exceptions, these relations were fairly consistent across adolescent gender and ethnicity. Some of the associations of adolescent self-regulation with structural family variables changed as tasks increased in potential for conflict. The following section will include a discussion of a few key points, as well as what these findings may indicate about the theoretical issues tangential to this study.

Although the relations were in the expected direction, associations between observational adolescent self-regulation and self-report, more trait-based measures of the same and related constructs were fairly weak, suggesting that these measures fundamentally reflect different underlying constructs. Although observational measures of ASR may tap into similar aspects of a person’s behavior as do self-report measures, self-report and observational ASR are not redundant when used simultaneously with the same participants. It may be that self-report measures reflect global, summary ratings, and observer ratings reflect more situation-specific ratings; as such, these different
methods may present incongruent results. Individuals reporting on their own traits and behavior in a global sense may view things differently than do observers from outside the family (in this case, research assistant coders) who see these behaviors in a single specific context. Additionally, the observational, context-specific measure of adolescent self-regulation employed in this study did not evidence many significant associations with adolescent outcomes commonly related to dispositional self-regulation in the research literature, such as substance abuse extent or severity, criminal behavior, school outcomes, sexual behavior, or having conventional or delinquent peers. This observation suggests that state-specific self-regulation reflects more changeable, context-dependent aspects of behavior than do global, dispositional, stable measures of how well or poorly an individual self-regulates.

The changes in adolescent self-regulation associated with changes in certain key task parameters, namely with task instructions and number of participants, points to the contextual nature of self-regulation. Given its changeability with these aspects of the social context, adolescent self-regulation is unlikely to strictly represent a trait-like ubiquitous aspect of an individual disposition. Rather, it appears to have components of an environment-responsive state. Adolescent self-regulation decreased as tasks increased in their potential for family conflict, and also evidenced a negative association with number of participating family members. There are several possible explanations for the finding of decreased ASR with more participating family members. It is possible that, with more family members participating, adolescents become more likely to “tune out” or to participate less in a structured task. Alternatively, the presence of family members with
whom adolescents have conflicted relationships may increase the likelihood that adolescents will behave in a way that is inappropriate or incongruent with the task, or may experience distressing emotions that they do not express appropriately. Given that adolescent drug users are likely to experience strained relationships with family members, it would not be surprising if the addition of more family members was associated with the experience of stress, by the adolescents and the participating family members. One final possibility is that poorer regulation by adolescents tends to invite involvement by a greater number of family members, and thus those poorly regulated adolescents may have more family members available to participate in a task. This idea would contrast with the general notion that worse adolescent self-regulation is associated with interpersonal conflict and fractured relationships.

Number of participants was associated with several structural family systems variables, in addition to adolescent self-regulation, resulting in the decision to control for this variable in examining the associations between ASR and constructs relevant to structural family systems theory. Specifically, number of participants was positively associated with enmeshment, disengagement, and parent-adolescent support role reversal, and negatively associated with identified patienthood, parent-child triangles, and sibling triangles. The finding that number of participants was related to enmeshment and disengagement in the same direction is somewhat surprising, in that these constructs are posited to reflect opposed constructs and are indeed negatively related to each other. It is possible that with more family members participating, there were more opportunities for family members to demonstrate the types of behaviors that counted toward enmeshment,
e.g., speaking over and/or for each other, and emotional contagion. The positive association of number of participants with enmeshment may also reflect closer families’ tendencies to involve more family members in family activities in general, including participation in the research tasks. With respect to disengagement, the participation of more family members may also make it easier for certain members to withdraw or not speak to one another. With regard to support role reversal, the greater number of participating family members may also present more opportunities for support role reversal to emerge. Incidences of identified patienthood, or the tendency to focus blame for many of the family’s problems and concerns on the adolescent identified patient, may have been less likely in large families in which family members’ focus during the tasks may have diffused from the adolescent specifically, to the varied members present for the task. This diffused focus may partly explain the decreased incidences of parent-child and sibling triangles involving the adolescent identified patient as more people participated.

Overall, variation in structural family systems variables together explained a significant amount of variation in observed adolescent self-regulation. This finding further points to the contextual nature of adolescent self-regulation and provides support for a structural family systems theory-based view of this construct often thought to reside within individual adolescents. Some of the associations of adolescent self-regulation with structural family systems variables were in the negative direction suggested by the theory; others were in positive directions that were opposite to expectation. It is impossible to determine causation from data collected at one time point; however, it is possible to speculate as to what may be happening with adolescent self-regulation and
aspects of family interaction. Better self-regulation was associated with decreased incidences of disengagement and of family members’ use of conflict avoidance strategies, findings consistent with the tenets of structural family systems theory. A disengaged family, characterized by apparent emotional distance and lack of connection to one another, may contribute to behavioral and/or emotional instability within an adolescent and to difficulty with self-regulation. Alternatively, adolescent behaviors typical of poorer regulation, e.g., acting out or inappropriate displays of negative emotion, may be associated with family members’ withdrawing and disengaging from that adolescent, and with him or her doing the same in turn. This pattern may occur in a cyclical manner, such that poorer self-regulation flourishes in disengaged environments, which stresses an adolescent’s ability and tendency to self-regulate, resulting in lower levels of self-regulation and enabling the family-level disengagement to persist. The finding that adolescent self-regulation was negatively associated with disengagement is consistent with structural family systems theory linking behavior problems to withdrawn, distant family relationships (e.g., Minuchin, Montalvo, Guerney, Rosman, & Schumer, 1968; Minuchin, 1974) and with other research linking disengaged family interaction patterns to internalizing and externalizing (e.g., Lindahl, Malik, Kaczynski, & Simons, 2004).

Adolescent self-regulation was also negatively associated with conflict avoidance. The presence of conflict avoidance in a family implies that a conflict exists, even though the family may not be expressing it. The process of conflict avoidance may relate to depletion of adolescents’ self-regulatory capacities, such that they may not regulate as well as they do when conflict is either absent or explicitly acknowledged. The families of
adolescents exhibiting behaviors associated with poorer self-regulation may be more likely to try to avoid or sidestep conflict as much as possible in the immediate context (and may be willing to engage in more conflict when the adolescent demonstrates better regulated behaviors). These two possibilities may occur in a cyclical fashion, thus maintaining each other: families demonstrating conflict avoidance and adolescents manifesting poorer levels of self-regulation when they are in conjoint interaction. This finding is consistent with systems theories of family functioning, which suggest that avoiding conflict as a way of maintaining family stability serves this purpose, though perhaps to the detriment of individual functioning.

The findings that adolescent self-regulation was positively associated with support role reversal, with outside triangles, and with parent-child triangles were surprising. Family systems theorists have historically conceptualized these constructs as boundary-breaching patterns associated with poorer adolescent functioning. This finding suggests that there may be aspects of these behaviors that are, in fact, adaptive, at least in the short run, and further research can elucidate the longer-term adaptive or maladaptive consequences of these phenomena. Supportive behaviors toward another person may overlap with behaviors associated with better regulation (e.g., of attention, behavior, and emotion) – it may be difficult to provide support while behaving in a dysregulated fashion. More fine-grained analyses of behaviors noted in making ratings of both support role reversal and ASR would provide information as to whether behaviors that raters judged to be relevant to the rankings overlapped; however, such data are not available for this study. Support role reversal may be positively associated with adolescent self-
regulation in contexts involving the adolescent and a parent figure when the other parent figure (if one exists) is not involved, independently of whether any siblings are present. Perhaps parents are more likely to recruit better-regulated adolescents into a support-providing role, or adolescents providing support to a parent display behaviors consistent with better self-regulation. One perhaps notable finding that emerged in examining potential covariates of adolescent self-regulation is that self-regulation was positively associated with certain parent substance use variables. Given that greater substance use may be associated with substance abuse by a parent, it is possible that adolescents with substance-abusing parents may be more likely to take on caretaking roles. Having a parent figure in a dependent role, substance abuse-related or otherwise, may be more likely to be associated with better-regulated behaviors on the part of an adolescent child. This finding should be interpreted with caution, however, given the relatively low incidence of support role reversal in this sample (additionally, support role reversal was not significantly related to parent substance use). Ethnicity moderation analyses indicated that the positive association between adolescent self-regulation and support role reversal appeared to be mainly true for Hispanic adolescents; among non-Hispanic adolescents, ASR and support role reversal were unrelated. Given this caveat, it is possible that cultural factors may underlie the connection (or lack thereof) between good self-regulation and support role reversal with a parent figure.

The finding that adolescent self-regulation had positive relations to outside triangles, such that ratings of self-regulation were higher when family members demonstrated a triangle with a non-participating member, was not entirely consistent with
structural family systems theory tenets presupposing the unhealthiness of any type of family triangle. Outside triangles may represent a more benevolent form of triangulation than the type generally thought to be detrimental to adolescent development. In outside triangles, an adolescent and another family member (often a parent figure in these tasks) discussed a family member who was not present and may have then been able to detour focus from their personal differences with each other. Relations with outside triangles disappeared with number of participants included in the model, suggesting shared variance between outside triangles and number of participants in accounting for changes in ASR. Outside triangles was negatively related to number of participants, such that with fewer participants, the incidence of such triangles increased. Adolescent self-regulation was also negatively associated with number of participants and remained so after outside triangles were included in a statistical model, although the strength of the association decreased, suggesting that outside triangles were somewhat related to the association of number of participants with adolescent self-regulation.

The benevolent triangulation inherent in outside triangles may be unique to parent-adolescent relations in a dyadic context, at least in this sample. This pattern is often characterized by the two participating family members discussing the non-participating member, and often in a negative light. For instance, in the “discuss an argument” task between a mother and an identified patient adolescent, the mother may recall some time when the adolescent’s non-participating sibling did something that caused the family pain. From here, the adolescent may continue the discussion, and mother and teenager have a peaceful conversation that preserves their relationship,
possibly to the exclusion of the non-participating sibling from the relationship. Given that the outside triangles had a relatively low incidence and that the presence of outside triangles was negatively correlated with number of participants, it is possible that the dyadic (adolescent-one parent figure) context was unique in allowing them to emerge and contribute to better self-regulation. Outside triangles may represent a fruitful topic for further research, to elucidate their associations with individual adolescent outcomes.

The finding that adolescent self-regulation was positively related to parent-child triangles, as measured by the difference between the strongest observer-rated parent-adolescent bond and the observer-rated parent-parent bond, is counterintuitive given the research evidence that parental triangulation of children has detrimental effects on children’s development. This commonly held notion was not supported by these findings. It is possible that parents more frequently recruit better-regulated adolescents into such a cross-generational triangle. Better-regulated adolescents may also be more likely to have closer relationships with either parent figure, despite what types of relationships the parents may have with each other (although this possibility involves looking at a series of dyadic interactions rather than the “thinking in threes” that is often useful in understanding family system relationships). Being recruited into a close relationship with a parent figure, even if it is triangulation, may, alternatively, protect these adolescents from the conflict-ridden interactions commonly associated with poorer self-regulation (e.g., disengagement, conflict avoidance). Additionally, the operationalization of parent-child triangles in the current study may have affected the direction of correlation: parent-child triangles were derived by taking the difference between the stronger adolescent-
parent alliance and the alliance between the two parents themselves. This operationalization may have reflected benevolent aspects of a positive adolescent-parent relationship more than it reflected triangles based on marital conflict that are ultimately destructive to the triangulated adolescent (as has often been presented in the literature).

Although enmeshment and identified patienthood were not significant predictors of ASR in the multiple regression, when examined separately in zero-order correlations and in MLM analyses, both were related to ASR (enmeshment in a positive direction, identified patienthood in a negative direction). The finding that enmeshment was positively related to adolescent self-regulation when examined on its own is another finding that runs counter to SFST, in that enmeshment has been associated with lack of individual differentiation among family members and, ultimately, with pathological relationships and disturbances in youth functioning. However, the significant association of adolescent self-regulation with enmeshment disappeared when examined simultaneously with other structural family variables, suggesting that those other variables explained variations in observed adolescent self-regulation more than did enmeshment. The MLM finding that the association between task instructions and ASR varied across different levels of enmeshment suggests that it is premature to discount enmeshment as a significant predictor of adolescent functioning. A tendency toward diffuse boundaries may be maladaptive in a task that calls for negotiation of individual preferences (e.g., plan a menu that will make all family members happy) but adaptive in a task that involves discussing a recent family argument: after all, if family members are not treated as separate entities, then there can be no interpersonal conflict, and the
regulation-depleting stress that adolescents may experience during this task may be reduced or eliminated.

It is particularly notable that disengagement emerged as the most robust predictor of structural family systems variables. Given that structural family systems theory has defined enmeshment and disengagement as opposite ends of a continuum related to interpersonal boundaries (enmeshment representing diffuse boundaries, disengagement representing rigid boundaries), it is informative that, at least among substance-using adolescents represented in this sample, disengagement demonstrated stronger relations to adolescent functioning than did its opposite. It appears that, at least in the case of substance-using adolescents in a predominantly male sample, rigid boundaries may be more harmful to adolescents than their opposite extreme. Adolescent self-regulation was also not significantly related to control role reversal or to cross-generational family triangles involving a sibling. Thus, in “thinking in threes” about family relationships, it may be that (when relevant) a comparison of the adolescent’s relationships with both parent figures may be more relevant to adolescent self-regulatory behaviors than is a comparison of the adolescent with his or her siblings. The finding that most of the structural family variables remained significantly associated with ASR even when controlling for number of participants and a global measure of family functioning provides support for the structural specificity hypothesis, namely, that specific types of structural anomalies are relevant as indicators of adolescent adjustment beyond global ratings of how well or poorly a family is doing.
Associations of adolescent self-regulation with two of the structural variables, namely enmeshment and outside triangles, changed across the three tasks, evidencing significant task x structural variable interactions in multilevel modeling analyses. Both variables were negatively associated with ASR in the first task, and positively associated with ASR in the third task. With regards to the changing ASR-outside triangle associations across the three tasks, it is possible that triangles involving a family member who is not present for the task but whom participating family members discuss are not particularly adaptive in a task that does not involve discussing family members – e.g., the task to plan a menu. However, when a task does invoke explicit discussion of family dynamics, as in the task to discuss a family argument, outside triangles may become relevant, and adaptive, to self-regulation. In this third task, family members in families with incidences of outside triangles may discuss a conflict that does not center around or blame any of them. In an adolescent, this type of focus away from him or her and on to a different person, with whom there is no confrontation (because that other person is not present) is likely not associated with the same behavioral and/or emotional regulation difficulties as an explicit conflict, or a discussion that did involve blaming the adolescent, would be. In this instance, outside triangles do serve their “benevolent triangulation” purpose vis-à-vis adolescent self-regulation. The findings with regard to enmeshment and outside triangles differentially predicting ASR across tasks lend support to the idea that self-regulation is a dynamic construct that varies with an individual’s environment, rather than residing within the individual him- or herself. Self-regulation has been shown to relate to several aspects of the context, notably, structural family dynamics, task
instructions, and the interaction between the two. Other, unexamined aspects of the context are likely to contribute further to adolescent self-regulation and its manifestations, and these aspects of the context may have additive or reciprocal effects.

In general, associations between ASR and the structural variables were fairly consistent across gender and ethnicity. The findings uncovered less gender moderation than might be expected, although research on gender and ethnicity variations in structural constructs has been relatively uncommon. In the instances where gender moderation was apparent, they were consistent with evidence in the research literature that individual and relational outcomes (in this case, conflict avoidance, control role reversal, and sibling triangles) may be more relevant to adolescent functioning for females than for males. Findings of overall non-significance of these constructs for the full sample may reflect the fact that the sample was predominantly male. There were trends for support role reversal and sibling triangles to be associated with ASR for Hispanic but not non-Hispanic adolescents. The finding for the full sample that support role reversal was positively associated with ASR may have been driven by its significance among those of Hispanic ethnicity, appearing significant for the full sample given the predominance of Hispanic adolescents (44%, the largest ethnic category represented in this sample). It should be noted that, due to the number of interactions tested, the moderation findings may be due to chance, so it would be premature to draw firm conclusions from these findings at this point. Given the paucity of research on ethnic moderation of structural family dynamics and their associations with individual adolescent outcomes, this finding offers a tentative possibility of ethnic moderation that future research remains to bear out.
The one finding related to support role reversal and Hispanic vs. non-Hispanic adolescents is somewhat consistent with the cultural variant hypothesis, which has received mixed support in the literature. The majority of family dynamics examined in this study did not vary in adaptiveness by ethnicity, however, precluding conclusions about the tenability of cultural-variation theories.

Limitations

This study has some limitations that preclude drawing firm conclusions at this point. Perhaps most notably, the ratings of global family functioning, structural family systems variables, and adolescent self-regulation all originate from a single time point, which precludes drawing causal or directional conclusions from these data. Observational ratings of ASR were also only obtained in one context (a family interaction task, in either a home or an agency setting) and thus do not take into account all environments relevant to a given adolescent (e.g., school, with friends, at a part time job). Observational ratings of adolescent self-regulation are not meant to be normative and do not take into account normative adolescent functioning. On this point, it is not known what levels of observed self-regulation are typical of adolescents or even, given the progression of changes expected among youth, at a given age (adolescents in this study ranged in age from 12 to 17). Given that adolescence is a time of development and change, some behavior that appears “dysregulated” may be highly typical of adolescents and thus may not reflect poor self-regulation at all. Additionally, this study did not take account of all possible factors that would be relevant to adolescent self-regulation and thus do not account for all the variance in ASR. Such factors include difficulties with acculturation, which would be
particularly important to assess among Cuban-American families in this sample whose families vary in terms of length of time in and assimilation to dominant U.S. culture (e.g., Szapocznik & Kurtines, 1980; Vega, Gil, Warheit, Zimmerman, & Apospori, 1993), and violence in families, e.g., marital discord, parent-child violence, a topic that has been shown to affect children’s adjustment patterns, among others. This study did not measure factors such as these. Finally, although the sample size was large enough to allow confidence in the findings, limited ranges of some of the variables e.g., low means for disengagement and outside triangles, two of the structural variables most consistently associated with ASR throughout the study, also may make it difficult to draw conclusions about their relations to ASR when they do not vary much over large intervals.

Theoretical Implications

Some of the findings are consistent with the tenets of structural family systems theory, which hold that problematic family triangles and boundary breaching patterns contribute to maladjustment among adolescents; other findings are somewhat inconsistent and merit further investigation. For example, parent-child triangles, outside triangles, and support role reversal were associated with better adolescent self-regulation, a finding which was surprising given that these structural anomalies have been generally found to be associated with adjustment difficulties. The finding that certain constructs were associated with better adolescent self-regulation suggests a possibility that certain structural anomalies offer individual benefits to family members. Alternatively, adolescents’ positive regulation may invite the presence of certain anomalies that may preserve family functioning. Taking a longitudinal view may assist in avoiding the
circularity inherent in such explanations and in punctuating the association between ASR and structural variables, i.e., which came first, and how these associations might develop. To this end, clinical observations may be helpful as well, given that structural family systems theory originated with clinical observations, which then informed subsequent research. It is also possible that these surprising findings suggest that long-term consequences (e.g., maladjustment among youth) may be different than short-term, in the moment consequences (e.g., the appearance of better regulation). Examination of longitudinal data could separate outcomes at different time points.

Certain findings support a contextual view of adolescent self-regulation. For example, even within individual adolescents, observer-rated self-regulation decreased across tasks, providing evidence for the relevance of situational factors to manifested self-regulation. The changeability of ASR according to structural variables supports a perspective that views ASR as a state. Multilevel modeling analyses finding variations by task additionally support a contextual view, demonstrating that interactions between task parameters and certain structural family systems variables (i.e., enmeshment and outside triangles) account for variations in adolescent self-regulation. The high correlations among adolescent self-regulation across tasks ($rs > .68$) suggested that adolescent self-regulation did remain fairly stable, arguing against a contextual view, but also not perfectly correlated, suggesting some changeability and variation in ASR as context changes. The results support the idea presented that structural family systems theory can inform a contextual perspective on adolescent self-regulation, given the findings of several significant associations with structural family systems variables.
Self-regulation appears to have both “state” and “trait” components. There is certainly some stability within individuals in terms of how they behave across a variety of situations, supporting a “trait” view. There are also aspects of behavior that are very situation-responsive and specific to aspects of family and social interaction. Indeed, the term “self” regulation may be problematic under these circumstances, as the process that is doing the “regulating” is inherently interpersonal, between the people (in this study, the family members) interacting. Behavior in any given context is likely to reflect an interaction between individual characteristics and situational, context-based demands. [Researchers in developmental psychopathology literature, e.g., Drabick & Kendall, 2010, have written about an individual x context interaction to be considered in diagnosing youth mental disorders.] Individual-, dyadic-, and family-level processes are interconnected and reciprocally influencing, and research studies simultaneously examining all of the above are often able to integrate and reconcile competing views and complex processes. The use of information from multiple sources on adolescent self-regulation and its different manifestations across contexts may help to separate the different aspects of adolescent self-regulation that are constant across situations and contexts (i.e., the trait-like aspects) vs. those that are more variable and situation-specific (i.e., the state-like aspects).

Clinical Implications

The results of this study have some clinical implications which can be applied to adolescent drug abusers. One is that it is important to consider the adolescent in context.
Families play a large role in adolescents’ lives, as all the youth in this study lived with a family member of some description. Clinicians treating the adolescent should learn as much as they can about the family and about the contextual circumstances under which an adolescent’s symptoms appear most vs. least severe. If possible, clinicians should involve family members in treatment with distressed or substance-using adolescents. If family environments can help maintain these symptoms, then they can also provide a medium through which to treat the symptoms. If an adolescent does not primarily reside within his or her family, then a clinician should call upon that adolescent’s primary social support system and setting, whatever it may be, to assist in the treatment.

The finding that observed ASR varied throughout differently structured tasks and different levels of structural family variables supports the idea of looking not at what children have – i.e., good self-regulation, poor self-regulation – but rather at what they do. Behavior is fluid and variable across contexts, and changes throughout a lifespan, particularly during youth (in fact, Kendall and Drabick, 2010, suggest that, in work with children and adolescents, the absence of change is more notable and meaningful than change itself!) Clinicians should strive to avoid over-reliance on global labels or diagnoses and instead look at ranges or variations in behavior and their correlates. Additionally, clinicians working with adolescents and their families may benefit from assessing for various structural anomalies that may be adaptive to adolescent functioning, or at least contain adolescent dysregulation, in the short run. This type of information can predict what will work and what will not in providing treatment to an adolescent or to a family.
Conclusion

The finding that adolescent self-regulation can vary substantially as a function of time and social context provides support for a view of self-regulation as a “state” of behavior, rather than merely as a “trait” that exists or does not exist in quantities that are fixed within the individual. Future research and theorizing may help to integrate this perspective into the current developmental perspective of adolescent self-regulation as a consistent, context-invariant trait. Studies may also attempt to disentangle those aspects of self-regulation that, at a given developmental time period, are fairly constant across situations vs. those that vary markedly from one context to the next. Integration of information from multiple reporters who know the adolescent in different contexts (e.g., home, school, with family, with peers, with authority figures) can provide the most comprehensive picture of self-regulatory behaviors in a given individual. It is possible that, within an adolescent, there may be a set level of self-regulation around which their behavior may vary, but it is also possible that within-person differences in self-regulatory behaviors exceed between-person differences. Future research may test this possibility, using both self-report and observational measures over a longer span of time and a greater range of contexts than that done in the current study. This study provides evidence for the structural specificity hypothesis, supporting the associations of ASR with structural family systems variables above and beyond global ratings of family functioning. Structural family systems variables provide one such entity around which self-regulation may revolve, though sometimes not in the direction predicted by theory. Self-regulation is not solely a constant entity, portable across time and contexts, and fixed
within the individual. Rather, it includes components that are dynamic, behavior-based, and variant across time and social context.
### APPENDIX A

**RATING ANCHORS FOR ADOLESCENT SELF-REGULATION (ASR)**

(9/20/06)

<table>
<thead>
<tr>
<th>Poor regulation</th>
<th>Good regulation</th>
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</thead>
</table>

#### A. Task focus

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
<th>6</th>
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<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inattentive. Gets “off task”. Easily distracted from FIAT instructions (e.g., contributes to product) and/or emergent tasks defined by family interaction (e.g., parental direction)</td>
<td>Attentive. Stays &quot;on task&quot; with respect to FIAT instructions (e.g., contributes to product) and/or emergent tasks defined by family interaction (e.g., parental direction)</td>
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#### B. Behavioral regulation

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Impulsive, impatient (e.g., can't sit still, blurts things out, interrupts others, switches topics abruptly)</td>
<td>Behavior appropriate to social context (e.g., waits for his or her turn, contributes constructively to task)</td>
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#### C. Emotional regulation

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Affect incongruent with social context in either type (e.g., giggles when occasion calls for seriousness) or intensity (e.g., flat affect, angry or tearful outbursts, overreacts to small problems) and/or Rapidly shifting emotional expression</td>
<td>Affect appropriate to social context in type and intensity</td>
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</table>

#### D. Initiation and Participation

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Nonresponsive; disengaged from task and other family members</td>
<td>Participates fully in task; initiates interaction with other family members</td>
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</tbody>
</table>
APPENDIX B

FAMILY INTERACTION ASSESSMENT TASK (FIAT) INSTRUCTIONS

Each FIAT involved three separate structured tasks. After setting up the camera such that all participating members were visible and able to talk to one another, the research assistant was to introduce the family tasks via the following script:

“I’m now going to ask you to do the three family tasks we’ve told you about. You will hear the instructions for each task from a tape I will play. We’ll do one task at a time, and you will have about five minutes to complete each task. If you do not understand the instructions, let me know and I will play them again. You can begin as soon as I leave the room. This exercise will be video recorded, so please speak clearly. Any questions?”

Task instructions were delivered to families via audiotape to ensure that families in the study all received the same instructions. Research assistants were instructed not to answer any family members’ questions about the task, although they were free to replay the instructions if a family member expressed uncertainty about them. If the family did not have any questions about the instructions, the research assistant was to say “I will come back in five minutes,” then leave the room, but remain in earshot of the family conversation. If families finished a task in under the allotted time, the research assistant would play the instructions for the next task. Additionally, if family members required more time, the research assistant was to allow them up to 10 minutes to complete the task. Research assistants were also instructed to try not to provide feedback to any family about their performance on a task.
Task instructions were as follows:

Task 1 (plan a menu): “Suppose all of you had to work out a menu tonight and would all like to have your favorite foods for dinner, but you can only have one meat, two vegetables, one drink, and one dessert. I’d like you to talk together about this and decide on ONE meal you would all enjoy that has one meat, two vegetables, one drink, and one dessert. Remember, you must end up agreeing on just one meal that everyone would enjoy. Okay, go ahead.”

Task 2 (likes and dislikes): “We all have things we like and dislike about the people in our family. Next we’d like you to talk together about the things that please you and make you feel good about each other, and also the things people do in the family that make you unhappy or mad. Everyone should try to give his or her own ideas about this. Okay, go ahead.”

Task 3 (discuss a conflict): “In every family things happen now and then that cause a fuss or disagreement. Next we’d like you to talk together about an argument, fight, or disagreement you’ve had at home. As you discuss the argument, try to remember what started it, who said and did what, and what people were arguing about. See if you can remember what it was all about. Take your time. Okay, go ahead.”
APPENDIX C
GLOBAL STRUCTURAL FAMILY SYSTEMS RATINGS (GSFSR) DESCRIPTIONS

Enmeshment - A pattern of enmeshment refers to a high level of interpersonal connectedness in the family as a group, regardless of how many family members are present. Although enmeshment reflects the dissolution of boundaries between family members (e.g., lack of differentiation or lack of emotional distance), it is not necessarily pathological. Blurring of interpersonal boundaries can occur when family members are warm and affectionate toward each other as well as hostile or critical. Observable behaviors that indicate enmeshment include family members speaking for one another, reading each others' minds, speaking of the family as an undifferentiated unit (e.g., “We like that,” referring to everyone in the family), touching one another, invasions of personal space, interrupting or continuing each other’s speeches, speaking simultaneously, acting as if family members control one another, or sharing joint emotional reactions (e.g., laughing or crying together). Enmeshment can also be indicated by the content of what family members say (e.g., invasions of privacy).

Disengagement – Disengagement is characterized by a low level of interpersonal connectedness in the family as a group. Here the boundaries are relatively impermeable and often associated with emotional distance. Again, this distance is not necessarily pathological, as disengagement can entail politeness, courtesy, dignity, etc. As much as possible, disengagement should be rated independently of warmth/affection and hostility/criticism.

Conflict avoidance – Conflict avoidance refers to the tendency of a family as a
group to avoid conflicts or disagreements among family members. Evidence of conflict avoidance includes minimizing, ignoring, ridiculing, using humor to make light of, or in other ways discouraging differences of opinion; distracting or changing the subject of conversation when disagreements begin to emerge; retracting statements in order to avoid conflict; and simply denying that any differences or conflicts exist.

**Support role reversal** – Support role reversal refers to the extent to which, in a parent-child dyad, the child provides nurturance or emotional support to the parent more than vice versa.

**Control role reversal** – Control role reversal refers to the extent to which, in a parent-child dyad, the child defines reality or tells a parent what to do more than the parent carries out those functions.

**Identified patienthood** – Identified patient-hood (IPhood) refers to the extent that the family tends to localize problems in the identified patient (IP), here, the adolescent referred for treatment. There is a high degree of identified patienthood in a family when family interactions tend to organize around and focus on the IP and his or her perceived symptoms. Thus, family members may ascribe problems only to the IP without taking into account how their own behavior (or how family interaction more generally) may play a role in this. Observable behaviors that indicate identified patienthood include criticisms or personal attacks directed at the IP, the tendency for the IP to be the topic of conversation, and statements that suggest that the IP is the primary cause of most or all the family’s problems. Statements like “you caused the argument” (task 3), “you enjoy
making my life difficult,” and “you made me feel bad” are examples of statements reflecting high degrees of IPhood often seen in the FIATs.

_Outside triangles_ refer to cross-generation triangles involving family members who do not participate in the FIAT. Indications of such triangles may emerge from the content of what participants say during the interaction task as well as from what they do. For example, a mother and adolescent may complain together about a father who is not present, or a child may defend an absent parent against criticism (cross-generation coalition). Alternatively, the IP or a sibling might act up during a FIAT task in a way that derails or distracts negativity toward an absent parent figure (conflict detouring triangle). Although different kinds of cross-generation triangles involving outside family members may be distinguishable, this code considers them together and provides a single score for outside triangles of any kind. Outside triangles, unlike the other cross-generation triangle patterns, can be identified and rated when only two family members participate in the FIAT.

_Parent-child triangles_ – Ratings of the relative strength of the dyadic alliances between the IP and each participating parent, as well as between the two parents themselves if they both participated, were completed by GSFSR raters. A positive alliance between members of a dyad is characterized by cohesion, reciprocity, and respect. This can be seen in the content of what family members say to each other (e.g., voicing agreement, identifying similar interests, sharing confidences, etc.), in who talks to whom, and in how participants relate to each other nonverbally (e.g., patterns of proximity, body orientation, eye contact, smiling, etc.). The low end (or absence) of
positive alliance can be characterized by either emotional distance and disengagement, or conflict and negativity. Positive alliance was coded independently of hierarchical arrangements such as the reversal of parent-child roles. Alliances were made on a scale from 1 to 5, with 1 representing a weak alliance (characterized by either distance or negativity), 3 a relatively neutral alliance, 5 a strong and positive alliance with the two members appearing close and connected, and 2 and 4 representing anchor points between 1 and 3 and between 3 and 5, respectively.

Sibling triangles – The presence of any sibling triangle was used to represent this variable. A sibling triangle could be stable or unstable in nature. Stable sibling triangles involve a coalition in which either the IP joins with one parent figure against or to the exclusion of the sibling, or in which a sibling joins with a parent figure against or to the exclusion of the IP. Such a coalition can be explicit, as when one parent and the sibling actively side with each other against the IP, or implicit, as when the excluded sibling appears almost to be a "third wheel," whose opinions and suggestions are ignored or disregarded by the primary dyad. Unstable sibling triangles involve cross-generation coalitions that are unstable or competing, with the IP or a sibling caught in between two other family members. This type of configuration is dynamic and changing rather than consistent and established. The triangulated child (sibling or IP) does not consistently take sides, but rather appears caught in the middle between parties in conflict. In conflict detouring triangles, one child appears to either (1) detour or reduce conflict or tension, or (2) promote engagement between another child and a parent figure.
## APPENDIX D

### ASSOCIATIONS AMONG DISPOSITIONAL SELF-REGULATION MEASURES

<table>
<thead>
<tr>
<th>Variable</th>
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<tr>
<td>1. YSR Total Problems Scale</td>
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<td>.69</td>
<td>.27</td>
<td>.68</td>
<td>.26</td>
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<td>2. DISC Predictive Internalizing, Adolescent Report</td>
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<td>3. DISC Predictive Internalizing, Parent Report</td>
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<td>4. DISC Predictive Externalizing, Adolescent Report</td>
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<td>5. DISC Predictive Externalizing, Parent Report</td>
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*Note. All ps < .001.*
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<tbody>
<tr>
<td>1. Task Focus</td>
<td>---</td>
<td>.68</td>
<td>.73</td>
<td>.74</td>
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<td>2. Behavioral Regulation</td>
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<td>.47</td>
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<td>3. Emotional Regulation</td>
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<td>.57</td>
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<td>4. Initiation and Participation</td>
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*Note.* All *p* < .001.
APPENDIX F

SITUATIONAL ADOLESCENT SELF-REGULATION COMPONENTS AND STRUCTURAL FAMILY VARIABLES

<table>
<thead>
<tr>
<th>Variable</th>
<th>Task Focus</th>
<th>Behavioral Regulation</th>
<th>Emotional Regulation</th>
<th>Initiation and Participation</th>
<th>Maximum N</th>
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<tbody>
<tr>
<td>Enmeshment</td>
<td>.26***</td>
<td>.07</td>
<td>.19***</td>
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<td>Disengagement</td>
<td>-.56***</td>
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<td>-.50***</td>
<td>-.61***</td>
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<tr>
<td>Conflict avoidance</td>
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<td>-.24***</td>
<td>-.34***</td>
<td>-.33***</td>
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<tr>
<td>Support role reversal</td>
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<td>.05</td>
<td>.08*</td>
<td>.03</td>
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<td>Control role reversal</td>
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<td>Identified patienthood</td>
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<td>Parent-child triangles</td>
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*Note: *p < .10, **p < .05, ***p < .01, ****p < .001.
REFERENCES


Rowa, K., Kerig, P.K., & Geller, J. (2001). The family and anorexia nervosa: Examining


