1-1-2000

The relation between gender-stereotyped behavior and adolescent depression : a sequential analysis of adolescent-mother interactions.

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THE RELATION BETWEEN GENDER-STEREOTYPED BEHAVIOR AND ADOLESCENT DEPRESSION: A SEQUENTIAL ANALYSIS OF ADOLESCENT-MOTHER INTERACTIONS

A Dissertation Presented

by

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Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2000

Psychology

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ACKNOWLEDGMENTS

I am deeply grateful to my mentor and dissertation chair, Sally Powers, for providing a seemingly endless supply of thoughtful feedback, guidance, and encouragement throughout my doctoral studies at the University of Massachusetts. Sally's creativity, integrity and commitment to research and teaching have continually inspired me. Each of my committee members - David Arnold, Paula Pietromonaco, and Maureen Perry-Jenkins - offered a unique perspective on this research; I thank them for their helpful consultation and guidance during each stage of the project. I owe a special debt of gratitude to David Arnold for his instruction in research design and statistics throughout my graduate studies.

This dissertation was supported by funds given by the Jeanne Humphrey Block Dissertation Award program at the Henry A. Murray Research Center at Radcliffe College, as well funds from the Department of Psychology at the University of Massachusetts Amherst. Roger Bakeman of Georgia State University provided invaluable assistance and consultation regarding the sequential analysis of interaction behaviors. Trina Hosmer of the University of Massachusetts was a wonderful resource for database management.

I have been very fortunate to have a loving family and many friends who have supported me every step along the way as I pursued both my undergraduate and graduate degrees. A special heartfelt thank you goes to my mother, Carolyn Battle, my father, the late William Battle, and my sister, Susan Battle McDonald.

Finally, I would like to acknowledge the research participants in the Rural Adolescent and Family Study; without these young people and their parents this research would not have been possible.

ABSTRACT

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AND ADOLESCENT DEPRESSION:

A SEQUENTIAL ANALYSIS OF ADOLESCENT-MOTHER INTERACTIONS

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One of the most commonly reported findings in the epidemiology of psychological disorders is the 2:1 ratio of women to men who suffer from depression, a difference in prevalence rates that first emerges during the adolescent years. Although aspects of the feminine gender role have been identified as risk factors for depressive symptoms, the analysis of interpersonal interaction is rarely used to assess how these constructs may be behaviorally enacted. In this dissertation, interactions between mothers and adolescents were analyzed to identify specific sequences of behavior associated with adolescents' depressive symptoms, with the aim of clarifying reasons for the dramatic increase in depression among adolescent girls. A community sample of 79 adolescents & their families participated over a 3-year period. Thirty-two consecutive segments of a videotaped problem-solving interaction task were viewed by participants and coded on the dimensions of *support, conflict, giving-in, humor, misunderstanding*, and *sarcasm*. Using sequential analyses and multiple linear regression, I assessed the extent to which sequences consistent

with the feminine gender role (*conflict* paired with *giving-in*) predicted concurrent and future depressive symptoms. Additional exploratory analyses examined maternal reactions to adolescent conflict. Results indicate that the pairing of conflict with giving-in during problem-solving interactions is predictive of future depressive symptoms, and that adolescent sex and history of depressive symptoms moderate this relation. As expected, the behavioral combination of conflict with giving-in was a riskier one for girls and for adolescents with a history of depressive symptoms. Maternal responses to adolescent conflict did not differ when mother-son dyads were compared to mother-daughter dyads.

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CHAPTER 1

INTRODUCTION

Gender differences in rates of depression are well documented in industrialized societies, with women two to three times more likely than men to suffer depressive symptoms, both in community-based and clinically referred samples (Nolen-Hoeksema, 1990; Weissman & Klerman, 1977; Weissman et. al., 1988). This difference in prevalence rates, unobserved between female and male children (Nolen-Hoeksema, Girgus, & Seligman, 1992; Offord et. al. 1987), dramatically rises during the adolescent years and persists throughout adulthood (Rutter, 1986; Tubman & Windle, 1995; Zahn-Waxler, 1996). In addition to the "gender switch" in incidence, the overall prevalence of depressive symptomatology, often measured via the broader construct of "internalizing" symptoms, increases for both boys and girls during this developmental period (Peterson et. al. 1993; Rutter, 1986).

In light of these epidemiological patterns, the adolescent years are a critical time in the life span to examine the etiology of depression (Allgood-Merton, Lewinsohn & Hops, 1990; Hankin et. al., 1998; Nolen-Hoeksema, 1994; Powers & Welsh, 1999; Rutter, 1996). Identifying factors leading to the onset of depressive symptoms in adolescence can assist in the development of more effective clinical interventions, with regard to both prevention and treatment. Early intervention is particularly important given the negative developmental trajectory associated with adolescent depression (Harrington et. al., 1990; Kandel & Davies, 1986; Peterson et. al., 1993).

Current explanations for women's higher incidence of depression fall into three broad categories: (1) biological theories (focusing upon hormonal and genetic differences); (2) social/environmental theories (highlighting women's lower economic status, traditional gender roles, higher rates of victimization, sexual abuse, discrimination, sexual harassment); and (3) cognitive/personality theories (focusing upon differences in cognitive sets, attributional style, responses to depressed mood). To date, no single causal explanation has garnered enough empirical support to account for the preponderance of women who are depressed (Brems, 1995; Nolen-Hoeksema, 1994), and it is generally assumed that multiple causal pathways can lead to this disorder.

The Gender Role Socialization Hypothesis

In this dissertation I examine how sociocultural factors, specifically gender-stereotypical interpersonal behavior, may put adolescent girls at risk for depressive symptoms. Underlying this hypothesis is the assumption that depression cannot be understood outside of the developmental, interpersonal, and cultural context in which it is shaped and maintained.

Using a Developmental Perspective

From the framework of developmental psychopathology, it is suggested that developmental challenges can influence the emergence of psychopathology - and that psychopathology can, in turn, influence the course of one's development (Cicchetti & Toth, 1995; Rutter, 1986). Using this perspective, which encompasses both "normal" and "abnormal" developmental trajectories, critical points may be identified in which young people deviate from healthy course of development (Keenan & Shaw, 1997). Because prevalence rates of psychological problems often vary by sex as well as by age,

this perspective is useful for understanding the emergence of sex differences in psychopathology as well.

One of the most consistent gender differences observed with regard to childhood and adolescent psychopathology is the disproportionately high rate of externalizing disorders among schoolage and adolescent boys (impulsivity, oppositional/defiant behavior, aggression, conduct problems and attention deficits), and the disproportionately high prevalence of internalizing disorders among adolescent girls (anxiety, fearfulness, withdrawal, depressed mood, and somatic complaints) (Achenbach, 1991). Rates of internalizing disorders appear to be equivalent for schoolage boys and girls, with the rise in prevalence of girls' internalizing appearing initially in early adolescence (Angold & Rutter, 1992), and becoming dramatically higher in mid-late adolescence (Hankin et. al., 1998).

Socialization into Gender Roles & the Impact of Gender Roles on Symptom Expression

It has been argued that socialization into gender roles may influence the expression of psychopathology - - with males more vulnerable to engage in overly active, individualistic style and females more vulnerable to possess overly passive, empathetic style (Block, 1983; Gjerde, Block & Block, 1988; Kandel & Davies, 1982; Leadbeater, Blatt & Quinlan, 1995; Zahn-Waxler, 1993). Huselid and Cooper (1994) surveyed 2013 adolescents and found that it was the adolescent's gender role (rather than biological sex) which accounted for most of the variance in internalizing and externalizing symptoms. Similarly, Repetti and Crosby (1984) surveyed 405 men and women and found that when occupational prestige and adult role are controlled, "the gender difference in rates of depression disappears."

Gender roles are "culturally constructed concept(s) referring to the expectations, attitudes, and behaviors that are considered to be appropriate for each gender in that particular culture" (Seeman, 1995, pg. 4). According to Hyde (1994), gender role socialization occurs through interactions with family members, teachers, peers, and through exposure to the media. From the late 1950's to the present day, a number of studies have examined discrepancies in the socialization practices of boys and girls, often via direct observation of parent-child interaction. Although an early review of this literature suggested that parents' socialization practices did not differ significantly based on the sex of the child (Maccoby & Jacklin, 1974), later analyses of the same literature has refuted this claim (Block, 1984), and a number of observational studies suggest gender-based socialization practices do persist. For example, Ross and colleagues (1990) found that parents of children as young as two years of age were more likely to encourage their daughters (rather than sons) to relinquish toys to peers, take another's perspective, and behave pro-socially; Kerig, Cowan and Cowan (1993) observed that parents of daughters ignored their child's assertions more than parents of sons. Lytton & Romney's 1991 meta-analysis of 172 studies regarding socialization practices found that, in general, very few differences existed in how parents socialize boys and girls (e.g. punishment style); however, they reported that "the one socialization area in North American studies where a clearly significant sex difference emerges is in the encouragement of sex-typed activities and perceptions of sex-stereotyped characteristics" (p. 267). There is also evidence that gender socialization, whether intentional or not, may persist into adolescence. For example, Leaper and colleagues (1989) found that during adolescent-parent interactions,

parents of adolescent girls did not support their daughters' attempts at autonomy and separation, emphasizing closeness with parents instead.

The Impact of Cultural Values on Mental Health

Related to the issue of gender-linked symptom expression is the question of whether gender role socialization increases the overall likelihood that psychopathology will be experienced. In other words, could certain aspects of culturally prescribed gender roles be "hazardous" to one's mental health? In a series of empirical and theoretical works, psychologist Jeanne Block (1973; 1984), has argued that gender role socialization patterns, in general, "attenuate the human possibilities of the individual," and that gender roles for women and girls, in particular, constrain the individual's development of the self (Block, 1984, p. 23).

Several personality traits and coping styles consistent with the stereotypically "feminine" gender role have been identified as possible risk factors for depression, including: high degree of empathy for others' feelings, lack of self-assertion in relationships, greater dependency upon others, and de-emphasis upon instrumentality. One hypothesized link connecting gender roles and depression proposed by Cox and Radloff (1984) is that girls' early socialization to depend upon others, with less emphasis on developing one's own instrumental competence, leads to learned helplessness, a precursor to depression (Seligman, 1975). Beck's (1983) constructs of sociotropy (social dependency) and autonomy (need for independence) have been linked to female and male gender roles respectively, with sociotropy frequently found to be a predictor of depressive symptoms (e.g. Baron & Peixoto, 1991). Jack (1991), building on Chodorow's (1978) and Gilligan's (1982) theories regarding women's psychological development, proposed

that women adopt schemas regarding appropriate gender role behavior in close relationships, and that a gender-related schema of "self-silencing" can contribute to women's vulnerability to depression. Nolen-Hoeksema has argued women's gender-linked, "ruminative" (self- and emotion-focussed) coping style is partially responsible for the predominance of depression among women, compared with a more active (problem-solving/distraction) approach used by men (Nolen-Hoeksema, 1991; Nolen-Hoeksema et. al., 1993).

In reviewing the literature on gender role characteristics and depressive symptomatology during adolescence, Hart and Thompson (1996) emphasize that not all aspects of the feminine gender role heighten the risk for depressive symptoms; they distinguish desirable/adaptive feminine characteristics such as "expressiveness" from qualities that represent extreme and perhaps maladaptive aspects of the feminine gender role, such as Jack's (1991) "self-silencing" construct and Beck's (1983) sociotropy construct. Koerner, Prince and Jacobson (1994) similarly note that most "feminine" characteristics are not in and of themselves depressogenic; they emphasize the importance of understanding women's normative development (Miller, 1976, Jordan, 1991) and the possibility that, for women, a "person-environment mismatch" may lead to increased risk for depression. Thus, while some aspects of the "feminine" gender role are unlikely to pose a risk for depressive symptoms, and may in fact represent normative or adaptive patterns of development, other aspects of the feminine gender role may have a negative impact on psychosocial adjustment, creating a vulnerability to depression.

Gender Roles, Interpersonal Relationships, and Depression

Next I will consider how gender roles are enacted, or "played out" in interpersonal relationships and how this interpersonal behavior may pose a risk for depressive symptoms. In relationship, women are often observed to have a more empathetic, expressive or "relational" than men. Observational studies of parent-child interaction demonstrate that girls, from the toddler years onward, are socialized to behave more pro-socially during interpersonal interactions and to possess a higher degree of empathy for other's feelings than boys (Ross et. al., 1990; Zahn-Waxler, 1996). On a behavioral level, this socialization pattern could ultimately lead to problems with non-assertiveness in interpersonal interactions, sacrificing the needs of the self while placing priority upon preservation of the interpersonal relationship (Lerner, 1987). Such a pattern could make girls feel responsible for others' problems (Zahn-Waxler, 1996), overly burdened emotionally by the need to attend to others (Brems, 1995, Leadbeater et. al., 1995; Nolen-Hoeksema, 1994), and less able to get their own emotional needs met. Jack's (1991) "Silencing-the-Self" theory proposes a number of problematic interpersonal behaviors related to women's gender role schemata: putting others' needs first, inhibiting self-expression to avoid interpersonal conflict, and presenting oneself outwardly as compliant regardless of inner resentment. Although findings have not shown that this pattern of self-silencing is unique to women, scores on the Silencing the Self Scale (Jack & Dill 1992) have been shown to predict depressive symptoms (Duarte & Thompson, 1999; Hart, 1996).

I will now turn to the impact of gender role socialization on mental health, within the context of adolescent development.

Gender Role Socialization During Adolescence and the Emergence of Depression

The Gender Intensification Hypothesis

Adolescence, often regarded as an important time in the development of one's gender identity, is also a time in which the relationship between gender role and mental health may be particularly important. According to the "gender intensification hypothesis," Hill and Lynch (1983) contend that early adolescence is a time of more rigid gender categorization and heightened adherence to culturally-defined gender roles. They note that before puberty, girls are more free to be "tomboys," with less pressure to be sweet, attractive and feminine; however, the onset of adolescence brings heightened pressure to be socially successful, attractive to boys, with active, "masculine" pursuits becoming less acceptable. In summarizing the socialization literature, Block (1984) similarly reported that "socialization becomes more sex-differentiated with the increasing age of the child, reaching a maximum during the high school years." A number of depression researchers (e.g. McGrath et. al. 1990) have noted the connection between gender intensification and the emergence of depression, speculating whether heightened pressure to conform to the feminine gender role is the hidden factor which accounts for adolescent girls' increased vulnerability to depression. In a large representative sample of adolescents, Wichstrom (1999) tested an extended gender intensification model and found that sex differences in depression were explained in part by intensification of the female gender role and developmental challenges experienced by adolescent girls.

The Emergence of Sex Differences in Depression During Adolescence.

Nolen-Hoeksema and Girgus (1994) evaluated support for three models which could explain the emergence of sex differences in depression during adolescence, including

(1) the causes of depression are the same for boys and girls, but these causes become more prevalent for girls during adolescence, (2) that the causes of boys and girls depression are different and (3) a diathesis-stress model, in which girls are more likely to carry risk factors before adolescence, but that these risk factors lead to depression only when certain stresses of adolescence are present. Nolen-Hoeksema and Girgus (1994) concluded that available data best supports the third diathesis-stress model, such that "pre-existing differences interact with increased challenges and changes [of adolescence] to yield the gender differences in depression that emerge at that time." Girls' less instrumental ruminative coping style was conceptualized as an important risk factor that increases vulnerability to symptoms.

Keenan and Shaw (1997) later endorsed Nolen-Hoeksema and Girgus' (1994) diathesis-stress model, positing that, for girls, the adolescent task of individuation may be complicated by a "devaluing of skills that were previously experienced as advantageous (e.g. empathetic responding)" (p. 110). Thus, socialization into a pro-social, empathetic, non-assertive role could put some girls at risk for internalizing problems, especially during the adolescent period of separation and individuation.

Considered one of the primary developmental tasks of adolescence (Grotevant & Cooper, 1985), individuation is an interactive process that entails developing autonomy from parents while still retaining closeness with them. It is plausible that conformity to the feminine gender role may interfere with the process of individuation - specifically the development of autonomy - by limiting the adolescent's ability to assert one's view during conflict. There is evidence that the disruption of autonomy-building during adolescence may lead to depressive symptoms. For example, Baron and Peixoto (1991) found that

depression is more prevalent among adolescents scoring higher on the "sociotropy" dimension of Beck's (1983) Sociotropy-Autonomy Scale, indicating a less autonomous, more socially dependent orientation. Also, the findings of Allen and colleagues' (1994) longitudinal investigation indicated that difficulties with individuation increase an adolescent's risk for future depressive symptoms.

The model evaluated in this study is consistent with Nolen-Hoeksema's diathesis-stress model in understanding the emergence of sex differences in depression during adolescence. I argue that a certain aspects of stereotypically "feminine" interaction (highly empathetic and unassertive behaviors), developed through years of gender socialization prior to and during adolescence, create a vulnerability to symptoms. Although this interaction style may be relatively unproblematic during childhood years, these behaviors may lead to serious difficulties during the adolescence when faced with developmental task of achieving autonomy from one's parents. This hypothesis will be explored using an interactional perspective, one that incorporates the broader social-relational context in understanding individual psychopathology.

Using an Interactional Perspective

Evolving out of sociology, family systems, and communications theory, the interactional perspective shifts the fundamental unit of analysis from the level of the individual, to that of the dyad, triad or family/group. In describing the genesis of the family interaction perspective, Jacobs (1987) writes:

> "...systems and communications perspective offered a new model within which to view disordered behavior - a model that first and foremost emphasized the primacy of the interactional context in attempts to understand any behavior, be it deviant or normative. The "strong" variant of this model suggested that it is not even meaningful to discuss

> psychopathology from an individual perspective because behavior is inextricably intertwined with the interpersonal context and has meaning only when viewed in this context. ...the unit of importance is the system of members in mutual and interdependent relationships with one another, not individual behavior apart from this context." (p.11)

The interactional approach was applied to the study of depression in the 1970's. Lewinsohn (1974) postulated that interpersonal relations played a causal role in depressive symptoms and specifically hypothesized that individuals become depressed due to having social skill deficits and a subsequent low rate of positive reinforcement from others. Coyne (1976) proposed a model of depressed social interaction in which the behavior of depressed persons prompts aversive (guilty, annoyed) reactions from others; these aversive reactions inspire non-genuine, incongruent messages which lead the depressed person to experience greater insecurity and depression. Thus, these theoretical models propose that social interactions were not only qualitatively different when one party is depressed - but that the social interactions play an important role in causing and/or perpetuating the disorder. Because of their relevance to the present topic, I will briefly review findings from observational studies of depressed individuals interacting with strangers, spouses and family members.

Depressed persons interactions with strangers and non-family members. During interactions with strangers, depressed persons (compared to nondepressed controls) have been observed to use less eye contact and have less pleasant facial expressions, use a lower toned, more monotonous speech (Gotlib & Robinson, 1982) and voice high levels of criticism, sadness, helplessness, and self-devaluation (Coyne, Kahn & Gotlib, 1987). Even during very brief interactions, the behaviors of depressed individuals can bring about hostile, anxious, and rejecting responses from others (Coyne, 1976).

Heller and Tanaka-Matsumi (1991) conducted sequential analyses of peer interactions between depressed and non-depressed adolescents and found that the clinical sample had significantly more "depressive behaviors" (negative statements about self and other, dysphoric affect) and that these behaviors decreased the likelihood of an aggressive response from the other.

Depressed persons interactions in marital relationships. In married couples, depression has been consistently associated with higher rates of marital discord, as well as greater hostility, aggression, guilt, poor communication, and dependency between spousal partners (Coyne et. al., 1987). Consistent with Coyne's model (and in contrast to studies with strangers), several studies of depressive marital interactions have noted that partners will often attempt to hide a hostile reaction from the depressed person (Biglan et. al., 1985). Partners' reactions may thereby negatively reinforce depressive behavior by inhibiting overt negative reactions from others. In a recent literature review, Johnson and Jacob (1997) summarized depressive marital interaction as generally more negative, unsupportive, and asymmetrical than marital interactions with non-depressed individuals.

Depressed persons interactions within the family context. A considerably smaller number of investigations have examined depression within the family environment. These studies have largely focused upon depressed mothers, with very little attention to the family interaction patterns of depressed children, adolescents, and fathers. In one recent study of depressed adolescents interacting with parents Sheeber and colleagues (1998) found that parents may inadvertently socially reinforce depressive behaviors (mothers increasing faciliative/problem-solving behaviors and fathers decreases aggressive behaviors). Slesnick and Waldron (1997) compared interactions of parents with a

depressed adolescent vs. interactions of parents with non-depressed adolescent and found that parents of depressed adolescents engage in higher rates of "incongruent communication" and suppress aversive content in response to adolescent depressive behavior. Both studies are consistent with Coyne's original (1976) interactional model of depression described earlier.

The Importance of Subjective Understanding of Interactions Social interaction can be interpreted from a variety of perspectives, including the perspective of the participants (the actors), the perspective of a subjective insider (an observer who has a relationship with the actor), or the perspective of an outsider's (an observer who does not know the actors) (Surra & Ridley, 1991). Typically, interaction researchers have sought the perspective of an outsider to code interaction data, in efforts to attain the most "objective" stance in understanding the interaction. However, this approach may be limited when the goal is to understand the unique meanings of interactions between individuals in close relationships. Empirical research has shown that observer ratings typically do not correspond to participant ratings; this discrepancy is likely to be a result of the outside observer's lack of understanding regarding the interactants' idiosyncratic meanings and shared relationship history, as well as the observer's potential for biased interpretation of behaviors due to cultural/gender stereotypes (Surra & Ridley, 1991).

Newer approaches to the analysis of close interpersonal interactions have been designed to capitalize upon, rather than eliminate, the insider's subjective understanding of their interactions. Powers, Welsh, and Wright (1994) emphasized the need to assess family members' subjective understanding of interpersonal exchanges, particularly as this relates to participants' affective experience of those interactions. They argue that

"adolescent affect, particularly that aspect of affect that is an adolescent's subjective understanding of family behaviors, mediates the influence of family behaviors upon adolescent outcomes" (p. 588). Similarly, Larson and Richards (1994) emphasized that adolescents and family members hold independent, and often divergent "realities" of the family environment that they all share. Tapping into family member's subjective understanding of interactions is consistent with newer conceptualizations of family relations, such as Bronfenbrenner and Crouter's (1982) person-process-context model, which emphasizes consideration of individual characteristics of family members, behavioral patterns of families, and the external ecological context.

The Rural Adolescent and Family Study (RAFS). Powers and colleagues conducted a longitudinal study of rural adolescent development at the University of Massachusetts from 1991-1994 which involved subjectively-coded family interaction data as well as parent and adolescent symptom measures at three annual time points. The present study involved a re-analysis of interaction data collected as part of the RAFS study.

Earlier analyses on the RAFS dataset by Powers and Welsh (1999) examined the hypothesis that adolescent girls' depressive symptomatology is related to difficulty negotiating autonomy. Two temporal models were used to explore the nature of this relationship: (1) a reactive model, which proposed that difficulties in the individuation process are in response to girls' depressive symptoms, and (2) a causal model which proposed that difficulties with the individuation process predict later depressive symptoms in adolescents. Videotapes of adolescent-mother problem-solving interactions were coded

by each participant two times.[i] First, participants rated their own behavior, using five codes (supportive, conflictual, humorous, giving in, sarcastic); next, the participant rated the other's behavior using five codes (supportive, conflictual, humor, giving-in, and misunderstanding).

Analyses of these interactions revealed support for both the reactive and the causal models. Specifically, a pattern was detected in which high levels of conflictual feelings and submissive behaviors on the part of the adolescent were predictive of later increases in internalizing symptoms. This potentially problematic style of managing conflictual interactions, labeled "agitated submission," was detected using aggregated analyses of interaction codes, collapsed across all interaction segments. However, the temporal relationship between adolescents' conflictual and submissive behaviors - that is, whether and how these behaviors occur close in time during the interaction – could not be discerned from the aggregated analyses.

The Present Study

The goal of the present study was to address the relation between gender role socialization and adolescent depressive symptoms by examining how gender stereotyped behaviors are associated with concurrent and future adolescent symptoms. Using data from the longitudinal RAFS study, I evaluated support for the hypothesis that, during adolescence, gender-stereotyped behaviors make the interactive process of individuation

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[i] Interactions between father-adolescent dyads were also recorded as part of the RAFS study; however, it was not possible to have these data subjectively rated by fathers due to their inavailability for full research participation. Thus, the present study focused specifically on the mother-adolescent dyad.

more difficult for girls, leading to later depressive symptoms. In this dissertation, the following questions were addressed:

Question #1

Is a pattern of "agitated submission" still predictive of depressive symptoms when parent-adolescent interactions are analyzed sequentially?

In this study I focused my attention conflict/giving-in sequences during problem-solving interactions as a behavioral expression of one potentially problematic aspect of the stereotypical feminine gender role. Although Powers and Welsh (1999) found that high rates of adolescent conflict and giving-in were predictive of adolescent symptoms, these analyses were based on aggregated data and therefore could not determine how adolescents' self-perceived conflict and giving-in were temporally linked during the interaction. For example, did the ratings of conflict and submission co-occur during the same interval, occur during adjacent intervals, or did these ratings simply occur at high levels at different points in the interaction task, independent of one another? Sequential analysis (Bakeman & Gottman, 1997; Gottman & Roy, 1990) allows for a more precise examination of the temporal relationship of interaction behaviors by focussing on the interval-by-interval chain of events. In this study, sequential analyses and standard multiple regression techniques were used to address the following specific questions regarding three different combinations of the codes conflict and giving-in[ii]:

AAconflict (lag 0) + AAgiving-in (lag 0) [C+G]

AAconflict (lag 0) → AAgiving-in (lag 1) [C→G]

AAgiving-in (lag 0) → AAconflict (lag 1) [G→C]

1. When these interactions are examined sequentially, does adolescent conflict paired with giving-in (in any order above) predict concurrent or future depressive symptoms?
2. If so, do these sequences predict depressive symptoms similarly for boys vs. girls?
3. If so, do these sequences predict future symptoms similarly for adolescents with and without elevations in prior depressive symptoms?
4. Finally, does the sequencing of the two behaviors matter (C+G, C→G, G→C)?

My hypotheses were as follows: (1) The pairing of conflictual and submissive behaviors close in time during family interactions (regardless of sequence) will predict of higher levels of depressive symptoms concurrently (Time 2) and in the future (Time 3). (2) Furthermore, I anticipate that these three behavior sequences would predict greater increases in symptom levels for girls and (3) that they will predict greater increases for adolescents with elevated levels of prior symptoms (4) Finally, although all three sequences may represent a problematic style of conflict, I anticipate that the C→G sequence (submitting after being conflictual), would be particularly problematic as a risk factor for depressive symptoms.

Question #2:

Do mothers respond differentially to adolescent girls' vs. adolescent boys' conflictual behaviors? If so, do these maternal reactions increase the likelihood of adolescents' submissive behavior?

[ii] Note: The first letter of each variable refers to who is doing the rating (A=Adolescent); the second letter in each variable refers to whose behavior is being rated (A=Adolescent, M=Mother) Lag 0 refers to the first interval, lag 1 to the interval immediately following it.

These analyses were more exploratory in nature. Given the importance of interpersonal interaction in shaping and reinforcing others' behavior (particularly in a parent-child relationship), I examined whether mothers were inadvertently discouraging girls from expressing a conflictual view. In an previous adolescent-parent interaction study, Leaper and colleagues (1989) found that parents discourage "separation" behaviors and encourage "communal" behaviors in adolescent girls, and found the opposite pattern with adolescent boys. These types of parental responses are important as they may complicate an adolescent's development of an autonomous identity from the parents. RAFS data were analyzed sequentially to see if mothers reacted differently to girls' vs. boys' conflict. Three sequences were evaluated:

AAconflict (lag 0) → AMconflict (lag 1) [C→C]

AAconflict (lag 0) → AMmisunderstanding (lag 1) [C→M]

AAconflict (lag 0) → AMsupport (lag 1) [C→S]

As these analyses were more exploratory in nature, I did not generate any specific hypotheses.

CHAPTER 2

METHOD

Study Design and Sample

The Rural Adolescent and Family Study (RAFS) was conducted by Powers and colleagues between 1991-1994. This project sampled 95% of the population of adolescents from a nine-town region in rural New England. All adolescents between the ages of 14-18 who were attending the county's two regional high schools (as well as teens who had dropped out of the school) were invited to participate in this project.

RAFS involved data collection at three time points (T1 = community survey 1, T2 = intensive family phase, T3 = community survey 2), each one year apart. Three nested subsamples were formed from the following combinations of these participants: the *cross-sectional* community sample (N = 626) combined the non-longitudinal T1 and T3 subsamples; the longitudinal community sample included 105 adolescents who participated in both T1 and T3; the longitudinal family sample included 83 subjects who participated in at least two of the three time points (T1•T2•T3).

This project utilized RAFS longitudinal family subsample. The sample for the intensive family phase was formed in the following manner. Of the 383 adolescents who initially took part at T1, 218 were invited to participate in the family phase of the study one year later (165 of the original T1 participants were deemed ineligible for the family phase due to having moved out of the area, having a sibling who already participated, their father was a single parent, or because they were foster children). Of the 218 families of adolescents who were contacted, 76 agreed to participate; an additional group of 7

students who were 8th graders during T1 also volunteered, for a total of 83 families. Because 4 families did not attend the second of two data collection sessions, this left 79 families with complete data. After data were collected, this subsample was compared to the larger cross-sectional sample on 55 demographic, family, and personality variables, and the only difference between the two samples which remained statistically significant after a Bonferroni correction was that adolescents in the family sample worked fewer hours in jobs outside of school.

Adolescents participating in the RAFS family phase ranged from 15-20 years of age, and included 49 females (62.0%) and 30 males (38.0%). With regard to race, the families were predominantly European-American (83.5% Caucasian/European-American; 2.5% African American, 1.3% Hispanic, 5.1% Native American, and 3.8 % did not specify race).

Interaction Tasks

During data collection for the intensive family phase, each adolescent-parent dyad was asked to engage in two video-taped discussion tasks in their own home. The first was based upon Grotevant & Cooper's (1985) "Plan a Vacation" task, which involves negotiating ways of being close and maintaining relatedness. This brief, 5-minute discussion was essentially used to get the dyad acquainted with the videotaping procedure.

The second interaction task involved having a discussion about an area of conflict specific to their relationship, and trying to reach a resolution of the conflict. The goal here was to capture an interaction which was affectively charged and meaningful to each party in the dyad. To do this, topics were chosen for each dyad separately, based upon the adolescent's and mother's independent ratings of issues on the Topics Checklist (Prinz et.

al., 1979). This checklist allows parents and adolescents to rate how often various issues have been discussed in the past four weeks as well as how "hot" the discussions usually were, ranging from "calm" (1) to "a little angry" (3) to "angry" (5). Some examples of topics on this checklist are: "talking back to parents," "smoking," and "which clothes to wear." Experimenters selected topics which both the adolescent and the parent reported discussing frequently, with a mild to moderate degree of intensity. Data from the second problem-solving interaction task were analyzed for this dissertation.

Coding & Video Recall Procedure

Videotaped parent-adolescent interactions were coded independently by participants using a video recall procedure (Powers, Welsh & Wright, 1994). For each participant, this procedure involved viewing the taped interaction twice within a few days after the initial recording. During the first viewing, the participant (teen or parent) watched the tape and rated his or her own behavior during each 15-second segment using five Likert-type rating scales to convey the extent to which they were acting in a supportive, conflictual, humorous, submissive ("giving in") or sarcastic manner. The second time the tape was viewed, the participant rated their partner's behavior, using similar, though not identical, dimensions: support, conflict, humor, submission, and misunderstanding. The rating scale for each dimension had five points, ranging from 0 ("not at all") to 4 ("very much so"). Each behavior was rated for each segment of interaction. Appendix A includes a copy of each Video Recall Coding Form.

Ratings for each 15-second segment of tape were recorded during an automatic 15 second pause; following the pause, the next 15-second segment would be played. This rating system continued for each participant until all 32 consecutive, 15-second segments

of videotaped interaction were coded. Because each participant rated their 8-minute interaction episode twice (rating self, then rating partner), ultimately there were a total of four complete sets of ratings for each dyad's 8-minute interaction episode.

Measurement of Symptoms

Adolescent symptoms were assessed using the Youth Self-Report (YSR) form (Achenbach, 1991). The YSR was developed as an adolescent version of the widely-used Child Behavior Checklist, and was revised to suit respondents aged 11-18. The YSR is a pencil and paper measure which asks respondents to indicate the extent to which they have experienced 102 behavioral symptoms over the past six months, using a 3-point scale ("0 - not true" to "2 - very often true"). Normative data and sound psychometric properties have been documented for the YSR measure (Achenbach, 1991), including test-retest reliability and stability and criterion and discriminant validity. The scored YSR reveals eight distinct syndromes; three of these sub-scales (Anxious/depressed, Withdrawn, Somatic) comprise the broader syndrome of Internalizing which will be as the dependent variable in the present study.

CHAPTER 3

RESULTS

Overall Strategy

Data analyses took place in four steps. First, sequential analyses were used to define and examine six family behavior sequences of interest, three addressing the pairing of adolescent conflict and submission, and three addressing maternal reactions to adolescent conflict. Contingency tables were generated and phi statistics computed for these six sequences, each statistic representing the association between the occurrence of a specified "given" behavior in one interval and the occurrence of a specified "target" behavior in the same or an adjacent interval. These phi scores were used in subsequent analyses, representing the extent to which each dyad enacted the six behavioral sequences.

Next, univariate distributions were examined for the presence of outliers, deviations from normality (skewness and kurtosis), and when available, consistency with national normative data.

Third, a series of multiple linear regressions was performed to assess the extent to which the conflict/giving-in behavioral sequences explained the variance in adolescent internalizing symptoms, both concurrently (Time 2) and in the future (Time 3). In each regression, the dependent variable was regressed onto the linear form of the independent variables. In addition to behavior sequence, other variables (sex of adolescent and, when appropriate, prior depressive symptoms), were included in the equation to control for their main effects. Interaction terms were also included to assess for moderating effects of

adolescent sex and prior depressive symptoms. To reduce the potential problem of multicollinearity, all initial terms were centered prior to computing the interaction terms (Jaccard et. al., 1990). Regression diagnostic procedures were used to assess for multicollinearity, heteroscadascity, nonlinear relationships between variables, and outliers (Fox, 1991). On several occasions influential outliers were identified and removed from the analysis; in the text, results are presented with and without the outlier points to provide the opportunity for comparison.

Finally, t-tests were used to compare the maternal response sequences of mother-daughter dyads to those of mother-son dyads.

Descriptive Findings for Adolescent Internalizing, Family Behaviors and Behavior Sequences

Adolescent Internalizing Variables

Adolescent internalizing was assessed by Achenbach's (1991) Youth Self Report measure at Time 1, Time 2, and Time 3. The present analyses include symptom measurements taken at Time 2 (T2DEP) and Time 3 (T3DEP). Univariate distibutions for both symptom variables indicated some departure from normality. The distribution of T2DEP has a slight positive skew; T3DEP has a positive skew and a high value for kurtosis, indicating the right tail of the distribution is longer than that of a normal distribution. The non-normal shape of these distributions was expected given the nature of the clinical symptoms being assessed within a community sample. Because the goal of present investigation is to examine correlates of depressive symptoms in a community sample with low base rates of these symptoms, the decision was made not to transform

these distributions so as to not lose valuable information. As shown in Table 1, and as reported earlier by Powers and Welsh (1999), girls had higher levels of internalizing at both Time 2 ($t = -2.66$, $p = .01$) and Time 3 ($t = -1.8$, $p = .08$). The Rural Family Sample showed similar differences in internalizing scores between boys and girls as those reported for a national sample of teenagers (Achenbach, 1991), however internalizing scores for adolescents in our sample were all somewhat higher than national norms.

Family Behavior Variables

Five family behavior variables (AAconflict, AAgiving-in, AMconflict, AMsupport, & AMmisunderstanding) were used in various combinations to create the behavioral sequences examined in this dissertation. As noted earlier, participants viewed their own videotaped interactions, rating self and partner on a 5-point scale (ranging from 0 "not at all" to 4 "very much so") for each behavioral code. In preparation for sequential analyses, these continuous data were transformed into dichotomous variables; to do this, each behavior was coded as either zero (absent) or one (present) for a given interval. To dichotomize the data, a cut-point of one was used for all codes except AMsupport; this variable required a cut-point of two due to an exceptionally high base rate.

The univariate distributions of all transformed behavioral variables were normal. Table 2 presents means and standard deviations for each behavioral variable for girls and boys. Sub-sample comparisons revealed that sons were more likely than daughters to rate their mother as misunderstanding (AMmisunderstanding, $t = 2.78$, $p = .007$); sons were also more likely than daughters to rate themselves as giving-in to their mother (AAgiving-in, $t = 2.57$, $p = .013$).

Behavior Sequences

Six two-code behavioral sequences were identified for analyses: three examining different pairings between conflict and giving-in, and three examining adolescent perception of maternal response to adolescent conflict. Means and standard deviations of these sequences are presented in Table 3. To define these sequences, I first used Bakeman & Quera's (1995) Sequential Data Interchange Standard (SDIS) program to transform the RAFS dataset into a standardized format in preparation for sequential analyses. Next, I used Bakeman & Quera's (1995) General Sequential Querier (GSEQ) program to the conduct sequential analyses, which entailed creating contingency tables for all sequences of interest, and then computing phi coefficient for each 2x2 table created.

The phi index, which ranges from –1 to +1, is similar to the Pearson correlation coefficient and represents the association between a specified "given" behavior in one interval (lag 0) and a specified "target" behavior which may occur either in the same interval (lag 0) or in the next interval (lag 1) (Bakeman & Casey, 1995; Bakeman, McArthur & Quera, 1996). Unlike a z-score, the phi coefficient is unaffected by the number of "tallies" for each behavior, and therefore allows comparison between dyads with different base rates of the behaviors in question (Bakeman & Gottman, 1997). Phi scores for each dyad were used in subsequent analyses to identify any differences between mother-son vs. mother-daughter dyads, and to assess the relation between the three agitated submission sequences and concurrent and future internalizing symptoms. Univariate distributions of the six behavior sequence variables did not deviate from normality.

Correlations Among Independent and Dependent Variables

Table 4 presents correlations among the behavior sequence variables and adolescent internalizing variables.

Conflict/Giving-In Behavior Sequences as a Predictors of Concurrent (T2) and Future (T3) Adolescent Internalizing Symptoms

Three conflict/giving-in behavior sequences were defined in order to examine the construct of agitated submission more closely. All sequences were based on the adolescent's perspective of his/her behavior. The first sequence, (C+G), indicates the likelihood that the adolescent rated her/himself as both conflictual *and* giving-in within the same 15-second interval (lag 0). The second sequence, (C→G), indicates the likelihood that the adolescent rated her/himself as conflictual at lag 0 and then giving-in in lag 1. The third behavioral sequence, (G→C), indicates the likelihood that the adolescent rated her/himself as giving in (at lag 0) and then immediately afterwards being conflictual (at lag 1). As stated earlier, these behavioral ratings for conflict and giving-in were shown by Powers and Welsh (1999) to be related to adolescent internalizing when aggregated across all 32 intervals. Because the temporal relationship between these behaviors was unclear, the present study aimed to clarify the nature of this relationship. The most clear representation of the agitated submission construct would be sequence C→G, conflict followed by submission. However, it was unknown if the behaviors were linked in this manner, if they had another sequential relationship, or if they simply occurred at high levels but at different times during the interaction.

My hypotheses were as follows: (1) The pairing of conflictual and submissive behaviors close in time during family interactions (regardless of sequence) will predict of higher levels of depressive symptoms concurrently (Time 2) and in the future (Time 3). (2) I anticipated that these three behavior sequences would predict greater increases in symptom levels for girls compared to boys and (3) that they will predict greater increases for adolescents with elevated levels of prior symptoms (4) Finally, although all three sequences may represent a problematic style of conflict, I anticipate that the C→G sequence (submitting after being conflictual), would be particularly problematic as a risk factor for depressive symptoms.

Table 5 presents a summary of analyses for these three sequences as predictors of concurrent (Time 2) internalizing symptoms; Table 6 presents a summary of analyses for these sequences as predictors of future (Time 3) symptoms. There were no significant differences found when comparing mother-son dyads to mother-daughter dyads on these three behavior sequence variables.

Conflict and Giving-In Within the Same Interval (C+G)

C+G as a Predictor of Concurrent (Time 2) Internalizing Symptoms. I first examined concurrent conflict and giving-in (both at lag 0) as a predictor of Time 2 internalizing symptoms. Diagnostic checks revealed one influential outlier that was later removed from the analysis; for purposes of comparison, results will be presented with and without that dyad's scores. With the outlier, the interaction term, (SEX) * (C+G), approaches significance (β=-.22, p=.07); without the outlier, the same interaction term, (SEX) * (C+G), is significant

at the .05 level (β=-.24). This interaction indicates that, for girls in our sample, higher levels of this behavioral combination (concurrent conflict and submission) are associated with higher levels of internalizing at Time 2. This finding is consistent with hypothesis that conflict/giving-in is associated with high levels of adolescent internalizing. Refer to Figure 1 for a depiction of this relationship.

C+G as a Predictor of Future (Time 3) Internalizing. One influential outlier was identified and removed from the analyses. With the outlier, the interaction term (T2DEP) * (C+G) was significant (β=-.35, p<.05); without the outlier, the (T2DEP) * (C+G) interaction term approaches, but does not meet, statistical significance (β= -.30, p=.11). Although not significant, this interaction suggests that prior level of prior internalizing symptoms may moderate the relationship between C+G behavior and T3 internalizing in the following manner: for adolescents with prior symptoms, higher levels of concurrent conflict and giving-in are associated with an increase in internalizing at Time 3. However, for adolescents without prior symptoms, this behavioral combination is not predictive of increases in depression. These results are presented in Figure 2.

Conflict Immediately Followed by Giving-In (C→G).

C→G as a Predictor of Concurrent (Time 2) Internalizing. No support was found for the hypothesis that this behavioral sequence is associated with increases in concurrent internalizing symptoms. Sex of adolescent predicted a significant amount of variance in Time 2 internalizing, with girls likely to have higher symptom levels (β= .31, p<.01).

C→G as a Predictor of Future (Time 3) Internalizing. Diagnostic checks revealed two influential outliers; both were removed. Results with and without the two points were similar, however the betas for several significant terms were higher with outliers removed. A three-way interaction was found between prior depressive symptoms (T2DEP), sex of adolescent (SEX), and the behavioral sequence of giving-in immediately after conflict (C→G), (β= .69, $p<.01$). To interpret this significant interaction, the slope of the regression line between C→G and T3DEP was calculated for two levels of the moderator variable, T2DEP (average and high, +1SD), for both boys and girls. Figure 3 presents findings for girls; Figure 4 presents findings for boys. The three-way interaction was interpreted in the following manner: For girls without elevations in prior symptoms, this behavioral combination is associated with moderate increases in future symptoms. However, for girls with prior depressive symptoms, the behavioral sequence of conflict followed by giving-in is associated with a sharp rise in future symptoms. These findings support the hypothesis that conflict followed by giving in is a particularly risky combination for girls, particularly for those with a history of depressive symptoms.

For boys, regardless of prior symptom level, this behavioral combination is not associated with increases in future internalizing symptoms above and beyond existing symptoms, and may be associated with slight decreases in symptoms.

Giving-In Immediately Followed by Conflict (G→C)

G→C as a Predictor of Concurrent (Time 2) Internalizing. There was no support for G→C as a predictor of concurrent internalizing. Sex of adolescent again predicted a

significant amount of the variance in Time 2 internalizing. Girls were more likely to have higher symptom levels (β= .30, p<.05).

(G→C) as a Predictor of Future (Time 3) Internalizing. Diagnostic checks revealed one point with influence on the regression line that was ultimately removed from the analyses. With the outlier, the three-way interaction of (SEX) * (G→C) * (T2DEP) approached significance as a predictor of T3DEP (β= -.28, trend p=.08); Without the outlier, this three-way interaction was significant at the .01 level. For interpretation, the slope of the regression line between G→C and T3DEP was calculated for two levels of T2DEP (average and high, +1SD) for both boys and girls. Refer to Figure 5 (girls) and 6 (boys). Results indicate that for adolescents with higher levels of prior symptoms, the behavioral sequence of giving-in followed by conflict is associated with an increase in future internalizing symptoms above and beyond existing symptoms; however, for adolescents without prior symptoms, this behavioral combination is associated with decreases in future internalizing. While the moderating effect of prior symptoms was similar for boys and girls, it appears to be particularly strong for boys.

Gender Differences in Maternal Response to Adolescent Conflict

The next set of analyses were more exploratory in nature. The goal was to determine if maternal response to adolescent conflict was different in mother-daughter dyads when compared to mother-son dyads. Specifically, I examined whether mothers respond to girls' conflict more negatively than to boys' conflict, or in a manner that may lead daughters to later give in? These analyses involved the adolescent's self-perceived conflict, and adolescent's

rating of maternal response. Three sequences were included in the analysis: adolescent conflict followed by maternal conflict (C→C), adolescent conflict followed by maternal misunderstanding (C→M) and adolescent conflict followed by maternal support (C→S). T-tests were used to compare mother-daughter dyads to mother-son dyads. As presented in Table 7, no significant differences were identified between these groups.

CHAPTER 4

DISCUSSION

This dissertation used a longitudinal dataset of rural adolescents and their families to investigate the link between specific sequences of interaction and adolescent depressive symptoms, with the aim of clarifying behavioral risk factors for girls. The first goal of the study was to evaluate whether a conflictual yet submissive style of negotiating problem-solving interactions was predictive of adolescents' depressive symptoms concurrently or in the future. Results suggest that the pairing of conflict with giving-in can pose a significant risk for future depressive symptoms. The three combinations of these behaviors identified (conflict+giving-in; conflict→giving-in; giving-in→conflict) predicted symptoms in different ways for boys and girls, and in different ways for adolescents with and without prior depressive symptoms. These moderating effects will be discussed in more detail in the sections that follow. My second aim was to examine maternal reactions to girls' vs. boys' conflictual interactions to determine if mothers in our sample responded differently to girls' vs. boys' conflictual statements, particularly in a manner that may lead girls to give in more frequently. However, no differences were identified regarding how mothers react to girls' vs. boys' conflict.

Agitated submission as a cause of depressive symptoms

The guiding hypothesis of this study was that the emergence of sex differences in depression during the adolescent years stems in part from gender role socialization. Some gender-stereotyped interpersonal behaviors, relatively unproblematic during childhood

years, may intensify during early adolescence (Hill & Lynch, 1983) and create difficulty for girls during the process of individuation. Girls' socialization typically promotes interpersonal behaviors that are inconsistent with the autonomy-building aspect of individuation. Although stereotypically "feminine" behaviors call for a less assertive, more empathetic style of interaction, individuation also requires the ability to assert oneself and tolerate moderate levels of conflict. A number of researchers have investigated interpersonal processes as correlates of girls and women's depression, and have theorized that gender socialization contributes to the development of depressive symptoms. In fact, most prevailing cognitive/personality theories regarding the predominance of depression among women point to gender-role related cognitive sets, personality traits, and coping styles as causal factors, and socialization practices are commonly implicated as a reason why these patterns are more prevalent among females (e.g. Hart, 1996; Leadbeater et.al. 1995; Nolen-Hoeksema, 1987; Nolen-Hoeksema & Girgus, 1994; Wichstrom, 1999). Although the gender role characteristics frequently hypothesized as risk factors for depression relate to how one manages relationships and interpersonal interaction, the analysis of observed interaction has not typically been used to examine how these gender role constructs are enacted behaviorally. The current findings are unique in capturing gender-stereotypical behaviors on a micro-social level and demonstrating that these behaviors do predict a significant amount of the variance in future depressive symptoms for girls. While this study cannot confirm the larger guiding hypothesis regarding the impact of gender role socialization on girls' depression, its findings are quite consistent with it.

In the present study, the different results for boys and girls and for adolescents with and without a history of depressive symptoms can be understood in light of the different meanings that these behaviors are likely to have for each group. Reasons for the moderating effect of gender and prior symptom elevations will be discussed below.

The Meaning of Conflict/Giving-In Sequences for Girls

For girls with or without elevations in prior depressive symptoms, the behavioral sequence that predicted the greatest increase in future depressive symptoms was conflict followed by giving-in. I interpret this sequence as representing an aborted attempt at self-assertion, or agitated submission, similar to Jack's (1991) notion of self-silencing: the adolescent attempts to assert a conflictual view, but immediately submits to the other's perspective. This behavioral pattern could reinforce a girl's view of herself as ineffective in self-assertion and less competent in problem-solving, both likely to limit autonomy from parents and reduce her ability to tolerate even small amounts of conflict in a relationship. Viewing oneself as frequently giving-in after conflict could also lead to a sense of being chronically "unheard" and thus less supported in the relationship. This conflict→giving-in behavioral pattern is not problematic when used less frequently in interpersonal interaction, and may in fact be quite adaptive as a means of compromise and preserving relational ties; however, when frequently used this strategy may lead to the problems identified above.

For girls with existing depressive symptoms, the conflict→giving-in sequence is predictive of even a greater increase in symptoms than it is for girls without existing

symptoms. The same problematic pattern of agitated submission and self-silencing may be occurring as with the non-depressed girls. In addition, as suggested by previous interaction research with depressed adolescents (Heller & Tanaka-Matsumi, 1999; Sheeber et.al., 1998), these girls may exhibit a high degree of negative content and negative affect during the interaction, and therefore their code of "conflict" may refer to a more hostile or critical type of communication. Hostile, uncooperative, critical behaviors such as these could create tension with family members, prompt incongruent communication with parents, and lead to increases in future depressive symptoms.

In contrast to the risk for future symptoms associated with the conflict->giving-in sequence, the *reverse* sequence (giving-in→conflict) appears to have a protective effect for girls, at least those without symptom elevations. For non-depressed girls, the ability to speak up for oneself, expressing conflict after initially giving-in, may indicate a healthy and adaptive ability to assert one's view. Interestingly, the same sequence (G→C) predicts slight *increases* in depressive symptoms among girls with existing symptoms. As noted above, this could reflect the type critical, hostile expression that is common among depressed adolescents.

Given that the order of the these two behaviors is relevant in predicting future symptoms for girls without prior symptoms (conflict→giving-in vs. giving-in→conflict) it is not surprising that when *both* behaviors are present within the same 15-second interval (conflict + giving-in) , there was neither an increase nor a decrease in future symptoms, and only a mild increase in concurrent (T2) symptoms. This is probably a reflection of the

lack of specificity of this sequence. Within one 15-second C+G interval, the adolescent may have either viewed herself as giving-in first *or* may have viewed herself as being conflictual first. It is therefore likely that both of the above conflict/giving-in combinations (C→G and G→C) are present in the conflict + giving-in (C+G), sequence. Likewise, because both sequences (C→G and G→C) are predictive of future symptoms for girls with existing symptoms, it is also not surprising that the conflict + giving-in sequence was associated with an increase in symptoms for depressed girls.

Viewing gender role socialization as a contributing factor in shaping these behaviors is only speculative, however gender-based pressures to respond empathetically to the other, and to not assert one's self too strongly could arguably prompt this type of conflictual/giving-in behavior. The association between conflict/giving-in behaviors and future depressive symptoms among adolescent girls is consistent with Allen & colleagues' (1994) findings that adolescents who experience difficulty with autonomy-building were more likely to experience depressive symptoms in the future. The addition of a measure of gender role characteristics in future research (e.g. Bem's (1974) Sex Role Inventory, Jack and Dill's (1992) Silencing the Self Scale) may clarify whether these behaviors are behavioral expressions of held gender role beliefs. However, it is unclear whether or not self-report scales of gender role characteristics correlate highly with observed interpersonal behaviors.

The Meaning of Conflict and Giving-In Sequences for Boys

The primary goal of this study was to examine gender-stereotyped behaviors as predictors of depressive symptoms among adolescent girls and to help elucidate reasons for the emergence of sex differences in depression at this point in the life span. As such, I did not set out to identify or test behavioral sequences that would be particularly risky for boys. I did predict, however, that the combinations of conflict and giving-in investigated as behavioral expressions of stereotypically feminine gender role would not, among adolescents without existing symptoms, pose the same risk for boys as they would for girls. Support was found for this hypothesis.

Contrary to the findings for girls, boys without a history of depressive symptoms did not have significant elevations of depressive symptoms following any of the conflict/giving-in sequences. Interestingly, the sequence that was most predictive of future depression for girls (conflict→giving-in), was associated with a slight *decrease* in depressive symptoms for boys. One interpretation of this finding is that, for non-depressed boys, pairing conflict with submission reflects a pro-social ability to compromise following the expression of conflict. This behavior, counter to traditional gender role socialization patterns for boys that emphasize agency and autonomy, may be adaptive by facilitating connection and closeness with parents during the process of individuation.

For boys with a history of depressive symptoms, expressing conflict after initially giving-in (G→C), or endorsing both behaviors during the same interval (C+G), predicted

moderate and small increases in future symptoms, respectively. In the studies by Heller and Tanaka-Matsumi (1999) and Sheeber and colleagues (1998) noted above, observer ratings of depressed adolescents' interactions were identified as having greater amounts of negative content and negative affect. Thus, these boys' "conflict" ratings may refer to a hostile or sarcastic approach to communication, rather than mere self-assertion. As with depressed girls' interaction, it is plausible that type of negativity could create tension in close relationships, prompt incongruent communications from parents, and lead to the perpetuation of depressive symptoms.

Maternal reactions to adolescent conflict

There were no differences in how frequently daughters vs. sons rated their mother as reacting in a conflictual, misunderstanding, or supportive manner after their own expression of conflict. These findings suggest that mothers do not react differentially to daughters' conflict, in a manner discouraging girls from autonomy building behavior. It is possible, however, that differences do exist in parental response to adolescent conflict, but that these differences cannot be detected in this small sample or were not detected by analyzing these particular three codes (conflict, misunderstanding, support). For these analyses, adolescent ratings of maternal response were selected because these perceptions were assumed to have the most relevance in determining future adolescent behavior, however the analysis of observer ratings or maternal self-perceptions could also provide useful information regarding maternal response patterns.

Study Limitations

Although these findings offer empirical support for the guiding hypothesis of this study (interpersonal behaviors as causes of depressive symptoms), causality cannot be established between interaction patterns and depressive symptoms because this study relies solely upon correlational data. Other variables not included in the present study may be responsible for the observed change in adolescent depressive symptoms. Furthermore, I analyzed behavior sequences believed to reflect interpersonal behavior consistent with the feminine gender role; this study cannot, however, establish that these behaviors are the result of gender role socialization.

Other important limitations of this study relate to the sample. To evaluate my hypotheses, I used a relatively small sample of predominantly European-American rural families. No families headed solely by a male, and no families headed by same-sex parents were included. Due to the homogeneity of the sample in terms of race and family structure, these findings may not be able to address the impact of familial relationships on individual functioning in families with different structures and in different racial/ethnic groups. Additionally, only mother-adolescent dyads were included in these analyses; it cannot be assumed that similar patterns would be observed during adolescent-father interactions. Finally, in this study, an eight-minute period of interaction was used to represent each dyad's interaction patterns; the relevance of some behavioral sequences may not appear in this relatively brief time frame. Using a larger, more diverse sample, with a longer period of coded interaction would yield more representative findings.

Future Research Directions

In the preceding sections I have interpreted the divergent meanings that self-perceived conflict and giving-in behaviors may have for boys and girls, as well as for teens with and without depressive symptoms. However, to explore whether these (or other) interpretations are accurate, it would be useful to directly evaluate the meaning that adolescents and their family members attribute to their interaction behaviors. This type of inquiry could be conducted by interview or questionnaire, or via a participant narrative regarding motivations for specific behaviors. This technique was employed in a study of preadolescents' dyadic peer interaction conducted by Strough and Berg (2000). They assessed participants' interaction goals to test a model of participant goals as mediators of gender differences in conversations; results indicated that girls were more likely to have high affiliation conversations because they valued the goal of mutual participation. Participant reports regarding underlying motivation, goal and meaning of their behaviors may be limited by lack of insight and/or lack of willingness to self-disclose; however in spite of these limitations such techniques could be quite helpful clarifying reasons for group and individual differences. Techniques that clarify mechanisms driving behavior are particularly important in light of the fact that the guiding hypotheses of many interaction studies (including this one) cannot be directly tested in an experimental design.

Future investigations of sex differences in adolescent depression would be strengthened by clarifying the connection between held beliefs regarding gender roles and gender-linked personality characteristics and specific patterns of interpersonal behavior. The salience of the interpersonal context for depression has been established through

adolescent depression (e.g. Schwartz, 1998; Mufson, 1996) and call for interpersonally-oriented preventative efforts as well.

APPENDIX A

MEASURES

Video Recall Coding Form (Teen Rating Self)

SEGMENT 1

	Not at all				Very much so
a. I am being SUPPORTIVE of my mother	0	1	2	3	4
b. I am being CONFLICTUAL with my mother	0	1	2	3	4
c. I am being HUMOROUS with my mother	0	1	2	3	4
d. I am GIVING IN to my mother	0	1	2	3	4
e. I am being SARCASTIC to my mother	0	1	2	3	4

SEGMENT 2

	Not at all				Very much so
a. I am being SUPPORTIVE of my mother	0	1	2	3	4
b. I am being CONFLICTUAL with my mother	0	1	2	3	4
c. I am being HUMOROUS with my mother	0	1	2	3	4
d. I am GIVING IN to my mother	0	1	2	3	4
e. I am being SARCASTIC to my mother	0	1	2	3	4

SEGMENT 3

	Not at all				Very much so
a. I am being SUPPORTIVE of my mother	0	1	2	3	4
b. I am being CONFLICTUAL with my mother	0	1	2	3	4
c. I am being HUMOROUS with my mother	0	1	2	3	4
d. I am GIVING IN to my mother	0	1	2	3	4
e. I am being SARCASTIC to my mother	0	1	2	3	4

SEGMENT 4

	Not at all				Very much so
a. I am being SUPPORTIVE of my mother	0	1	2	3	4
b. I am being CONFLICTUAL with my mother	0	1	2	3	4
c. I am being HUMOROUS with my mother	0	1	2	3	4
d. I am GIVING IN to my mother	0	1	2	3	4
e. I am being SARCASTIC to my mother	0	1	2	3	4

Video Recall Coding Form (Teen Rating Parent)

SEGMENT 1

	Not at all				Very much so
a. My mother is being SUPPORTIVE of me	0	1	2	3	4
b. My mother is being CONFLICTUAL with me	0	1	2	3	4
c. My mother is being HUMOROUS with me	0	1	2	3	4
d. My mother is GIVING IN to me	0	1	2	3	4
e. My mother is MISUNDERSTANDING me	0	1	2	3	4

SEGMENT 2

	Not at all				Very much so
a. My mother is being SUPPORTIVE of me	0	1	2	3	4
b. My mother is being CONFLICTUAL with me	0	1	2	3	4
c. My mother is being HUMOROUS with me	0	1	2	3	4
d. My mother is GIVING IN to me	0	1	2	3	4
e. My mother is MISUNDERSTANDING me	0	1	2	3	4

SEGMENT 3

	Not at all				Very much so
a. My mother is being SUPPORTIVE of me	0	1	2	3	4
b. My mother is being CONFLICTUAL with me	0	1	2	3	4
c. My mother is being HUMOROUS with me	0	1	2	3	4
d. My mother is GIVING IN to me	0	1	2	3	4
e. My mother is MISUNDERSTANDING me	0	1	2	3	4

SEGMENT 4

	Not at all				Very much so
a. My mother is being SUPPORTIVE of me	0	1	2	3	4
b. My mother is being CONFLICTUAL with me	0	1	2	3	4
c. My mother is being HUMOROUS with me	0	1	2	3	4
d. My mother is GIVING IN to me	0	1	2	3	4
e. My mother is MISUNDERSTANDING me	0	1	2	3	4

Video Recall Coding Form (Parent Rating Self)

SEGMENT 1

	Not at all				Very much so
a. I am being SUPPORTIVE of my teenager	0	1	2	3	4
b. I am being CONFLICTUAL with my teenager	0	1	2	3	4
c. I am being HUMOROUS with my teenager	0	1	2	3	4
d. I am GIVING IN to my teenager	0	1	2	3	4
e. I am being SARCASTIC to my teenager	0	1	2	3	4

SEGMENT 2

	Not at all				Very much so
a. I am being SUPPORTIVE of my teenager	0	1	2	3	4
b. I am being CONFLICTUAL with my teenager	0	1	2	3	4
c. I am being HUMOROUS with my teenager	0	1	2	3	4
d. I am GIVING IN to my teenager	0	1	2	3	4
e. I am being SARCASTIC to my teenager	0	1	2	3	4

SEGMENT 3

	Not at all				Very much so
a. I am being SUPPORTIVE of my teenager	0	1	2	3	4
b. I am being CONFLICTUAL with my teenager	0	1	2	3	4
c. I am being HUMOROUS with my teenager	0	1	2	3	4
d. I am GIVING IN to my teenager	0	1	2	3	4
e. I am being SARCASTIC to my teenager	0	1	2	3	4

SEGMENT 4

	Not at all				Very much so
a. I am being SUPPORTIVE of my teenager	0	1	2	3	4
b. I am being CONFLICTUAL with my teenager	0	1	2	3	4
c. I am being HUMOROUS with my teenager	0	1	2	3	4
d. I am GIVING IN to my teenager	0	1	2	3	4
e. I am being SARCASTIC to my teenager	0	1	2	3	4

Video Recall Coding Form (Parent Rating Teen)

SEGMENT 1

	Not at all				Very mueh so
a. My teenager is being SUPPORTIVE of me	0	1	2	3	4
b. My teenager is being CONFLICTUAL with me	0	1	2	3	4
c. My teenager is being HUMOROUS with me	0	1	2	3	4
d. My teenager is GIVING IN to me	0	1	2	3	4
e. My teenager is MISUNDERSTANDING me	0	1	2	3	4

SEGMENT 2

	Not at all				Very mueh so
a. My teenager is being SUPPORTIVE of me	0	1	2	3	4
b. My teenager is being CONFLICTUAL with me	0	1	2	3	4
c. My teenager is being HUMOROUS with me	0	1	2	3	4
d. My teenager is GIVING IN to me	0	1	2	3	4
e. My teenager is MISUNDERSTANDING me	0	1	2	3	4

SEGMENT 3

	Not at all				Very mueh so
a. My teenager is being SUPPORTIVE of me	0	1	2	3	4
b. My teenager is being CONFLICTUAL with me	0	1	2	3	4
c. My teenager is being HUMOROUS with me	0	1	2	3	4
d. My teenager is GIVING IN to me	0	1	2	3	4
e. My teenager is MISUNDERSTANDING me	0	1	2	3	4

SEGMENT 4

	Not at all				Very mueh so
a. My teenager is being SUPPORTIVE of me	0	1	2	3	4
b. My teenager is being CONFLICTUAL with me	0	1	2	3	4
c. My teenager is being HUMOROUS with me	0	1	2	3	4
d. My teenager is GIVING IN to me	0	1	2	3	4
e. My teenager is MISUNDERSTANDING me	0	1	2	3	4

APPENDIX B

TABLES

Table 1

Means and Standard Deviations of Adolescent Internalizing Scores at Time 2 and Time 3 in Rural Family Sample and National Normative Sample

	Boys		Girls	
Sample	N	M (SD)	N	M (SD)
Rural Family Sample				
Time 2 internalizing	26	12.38 (8.19)	44	17.84* (8.42)
Time 3 internalizing	15	9.47 (8.00)	35	14.20t (9.52)
National Norms (Achenbach, 1991)	637	10.50 (7.0)	678	12.90 (8.5)

t $p<.10$
* $p< .05$

Table 2

Means and Standard Deviations of Behavior Scores of Boys and Girls

	Boys (n=31)		Girls (n=48)	
Behavior Variable	M	SD	M	SD
Aaconflict	5.26	2.63	4.35	2.24
AAgiving-in	4.81**	2.57	3.33	2.35
AMconflict	5.03	2.40	4.15	2.47
AMsupport	4.48	2.54	4.27	2.30
AMmisunderstanding	4.97*	2.75	3.31	2.30

Note: The first letter of each variable refers to who is doing the rating (A=Adolescent); the second letter in each variable refers to whose behavior is being rated (A=Adolescent, M=Mother).

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

Table 3

Means and Standard Deviations of Behavioral Sequence (Phi) Scores

	Total Sample (n=79)	
Behavior Sequence	M	SD
Aaconflict (lag 0) & AAgiving-in (lag 0) [C+G]	.067	.275
Aaconflict (lag 0) → AAgiving-in (lag1) [C→G]	.063	.245
Aagiving-in (lag 0) → AAconflict (lag 1) [G→C]	-.019	.212
Aaconflict (lag 0) → AMconflict (lag 1) [C→C]	.342	.248
Aaconflict (lag 0) → AMsupport (lag 1) [C→S]	-.130	.243
Aaconflict (lag 0) → Ammisunderstanding (lag 1) [C→M]	.218	.203

Note: The first letter of each variable refers to who is doing the rating (A=Adolescent); the second letter in each variable refers to whose behavior is being rated (A=Adolescent, M=Mother).

Table 4

Correlations Among all Behavioral Sequence Variables and Adolescent Internalizing Variables

Variable	1	2	3	4	5	6	7	8
1. AAconflict (lag 0) & AAgiving-in (lag 0) [C+G]	----	.49**	.53**	.15	.11	-.06	-.05	-.20
2. AAconflict (lag 0) → AAgiving in (lag 1) [C→G]		----	.46**	.10	.07	-.19	-.08	-.21
3. AAgiving in (lag 0) → AAconflict (lag 1) [G→G]			----	.09	.07	-.07	-.09	-.25
4. AAconflict (lag 0) → AMconflict (lag1) [C→C]				----	-.14	.24	-.14	-.06
5. AAconflict (lag 0) → AMsupport (lag 1) [C→S]					----	-.35**	-.03	.29
6. AAconflict (lag 0) → Ammisunderstanding (lag 1) [C→M]						----	.30*	.20
7. Internalizing at T2 [T2DEP]							----	.57**
8. Internalizing at T3 [T3DEP]								----

** p<.01
* p<.05

Note: The first letter of each variable refers to who is doing the rating (A=Adolescent); the second letter in each variable refers to whose behavior is being rated (A=Adolescent, M=Mother).

Table 5

Summary of Hierarchical Regression Analyses for Conflict-Giving-In Behavior Sequences Predicting Concurrent Internalizing Symptoms

Name of T2 Behavior Sequence	Sex of Adolescent (β)	T2 Behavior Sequence (β)	Sex * Behavior Interaction (β)	ΔF	Multiple R	R^2	df
C+G	.38**	.012	-.24*	4.75	.44	.20	3,58
C→G	.31**	-.08	.15	2.65	.35	.12	3,57
G→C	.30*	-.05	-.00	2.05	.31	.20	3,58

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

Table 6

Summary of Hierarchical Regression Analyses for Conflict-Giving-In Behaviors, Sex of Adolescent and Existing Internalizing Symptoms Predicting Future Internalizing Symptoms

Name of T2 Behavior Sequence	Sex of Adolescent (β)	T2 Behavior Sequence (β)	T2 Symptoms (β)	Sex * Behavior Interaction (β)	Sex * T2 Symptoms Interaction (β)	Behavior * T2 Symptoms Interaction (β)	Sex * Behavior *T2 Symptoms Interaction (β)	ΔF	Mult R	R Square	Df
C÷G	.02	-.13	.58**	.08	-.01	-.30	.16	2.82	.61	.36	7,33
C•G	.48*	-.42**	.15	.30t	.48*	-.29	.69**	5.19	.73	.54	7,31
G•C	.01	-.31*	.34*	.19	.26t	.41**	-.44**	5.46	.738	.54	7,32

t p<.10
* p<.05
** p<.01

Table 7

Means and Standard Deviations of Behavioral Sequence (Phi) Scores for Mother-son Dyads and Mother-daughter Dyads

	Mother-son dyads (n=26)		Mother-daughter dyads (n=44)	
Behavior Sequence	M	SD	M	SD
Aaconflict (lag 0) • AMconflict (lag 1) [C•C]	.291	.188	.370	.275
Aaconflict (lag 0) • AMsupport (lag 1) [C•S]	-.109	.188	-.141	.238
Aaconflict (lag 0) • Ammisunderstanding (lag 1) [C•M]	.211	.206	.222	.202

Note: The first letter of each variable refers to who is doing the rating (A=Adolescent); the second letter in each variable refers to whose behavior is being rated (A=Adolescent, M=Mother).

APPENDIX C

FIGURES

Figure 1

Conflict + Giving-in (C+G) Behavior Sequence as a Predictor of Concurrent Depressive Symptoms.

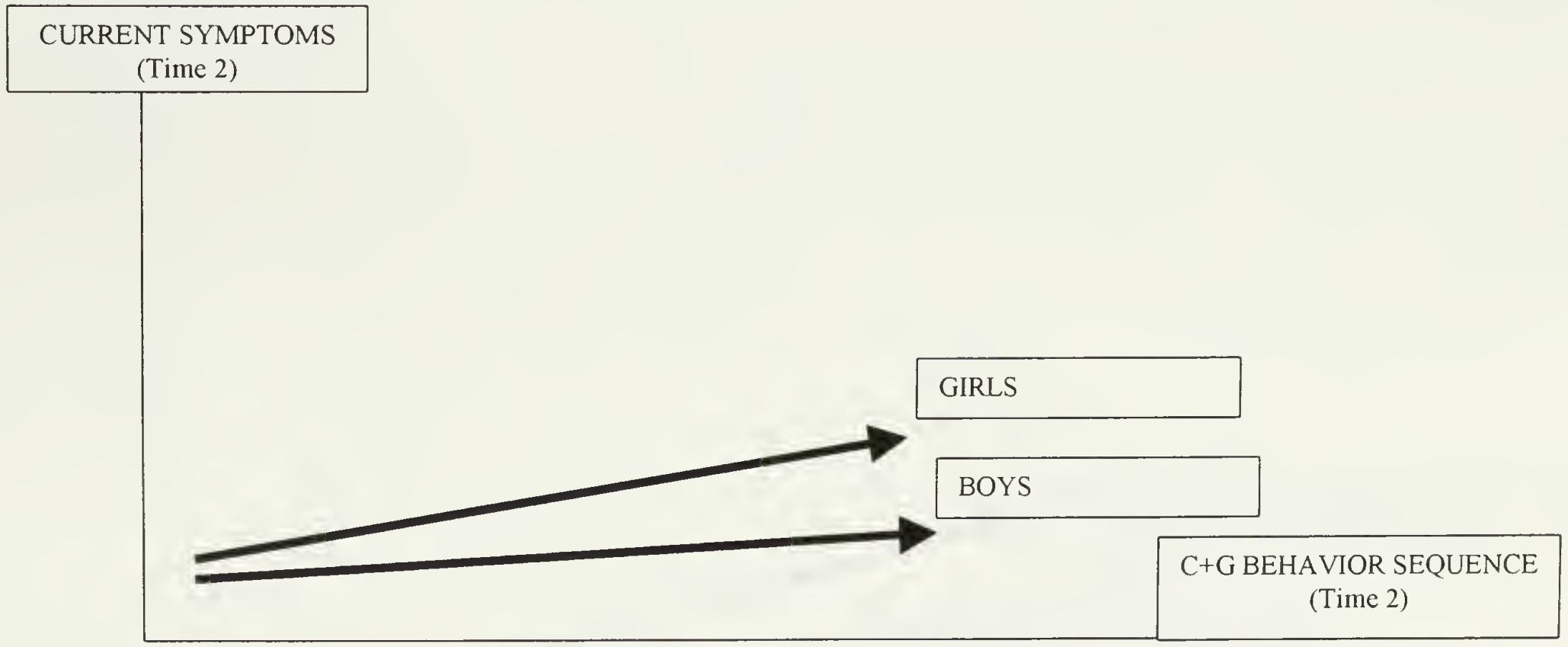


Figure 2

Conflict + Giving-in (C+G) Behavior Sequence and Prior Depressive Symptoms as Predictors of Future Depressive Symptoms.

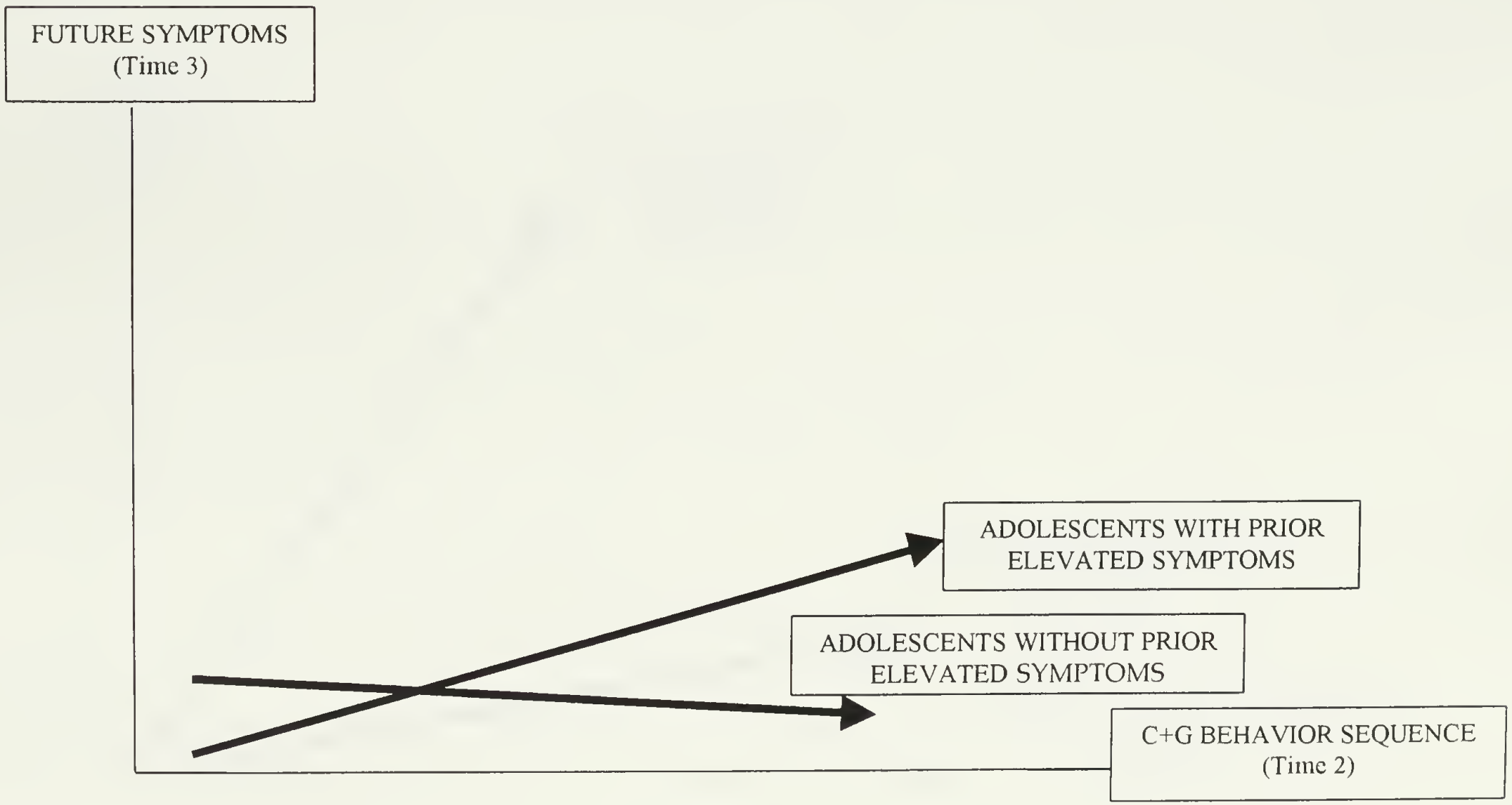


Figure 3

Conflict→Giving-in (C→G) Behavior Sequence and Prior Depressive Symptoms as Predictors of Future Depressive Symptoms (GIRLS).

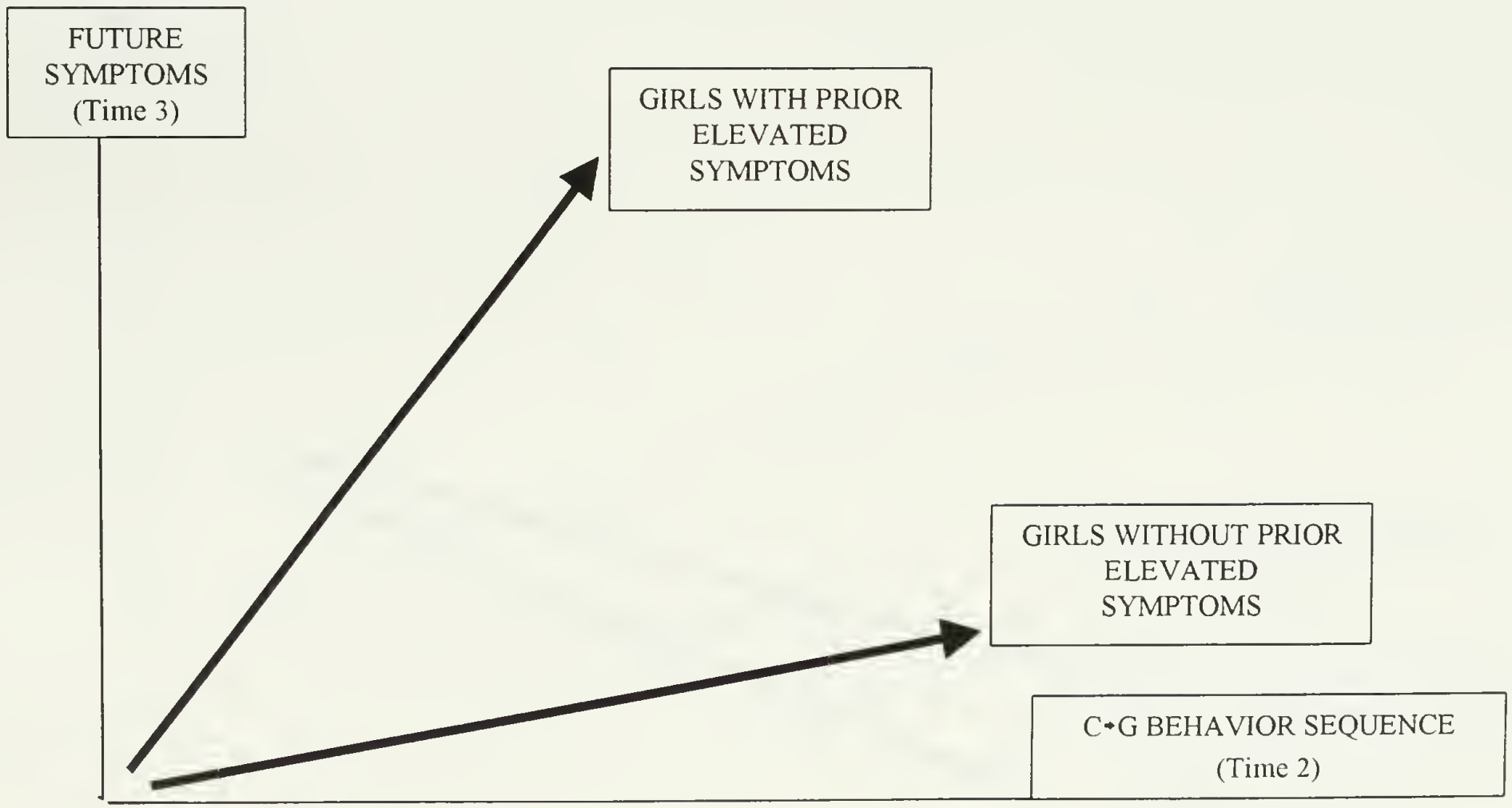


Figure 4

Conflict→Giving-in (C→G) Sequence and Prior Depressive Symptoms as Predictors of Future Depressive Symptoms (BOYS).

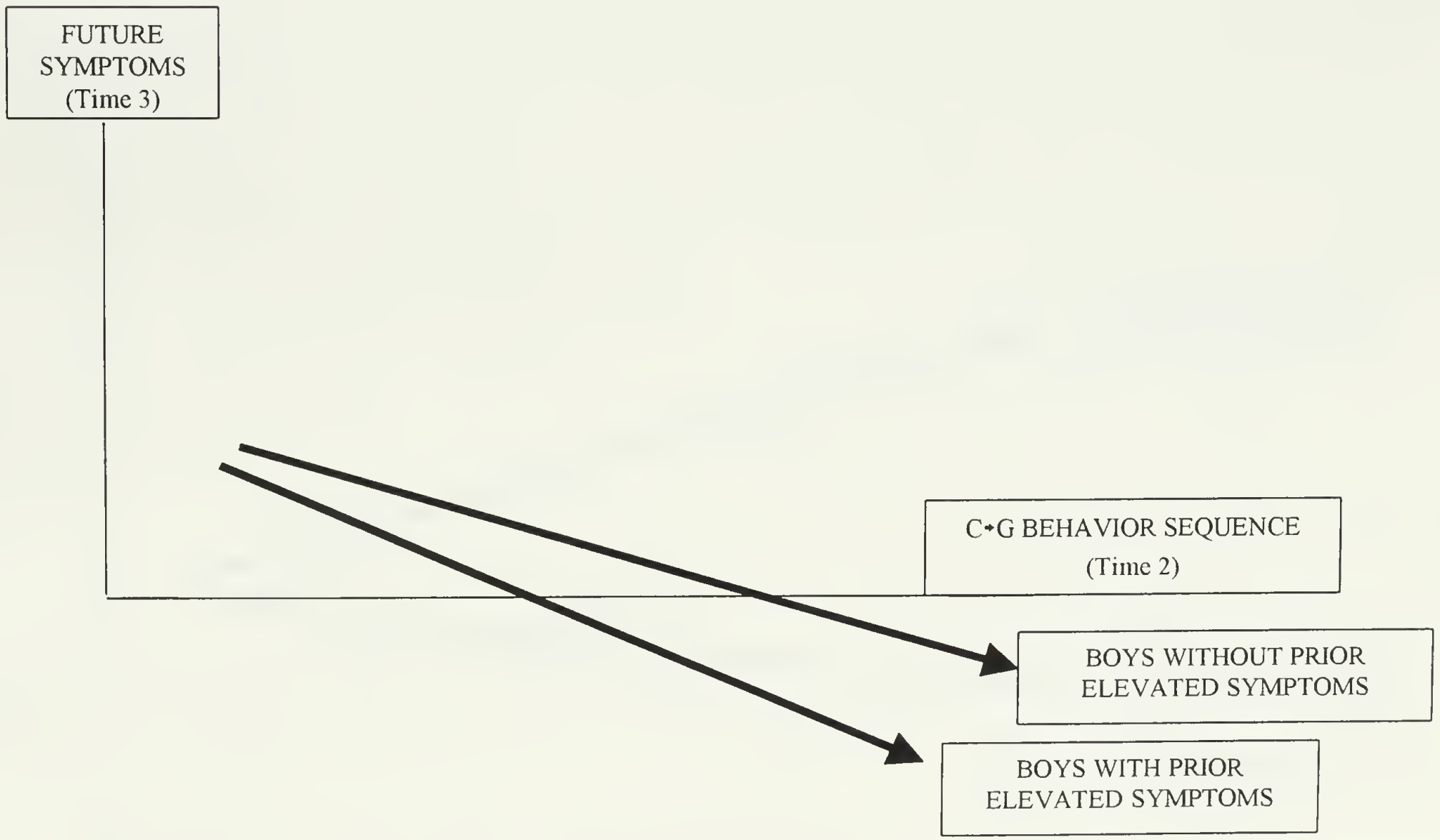


Figure 5

Giving-in→Conflict (G→C) Behavior Sequence and Prior Depressive Symptoms as Predictors of Future Depressive Symptoms (GIRLS).

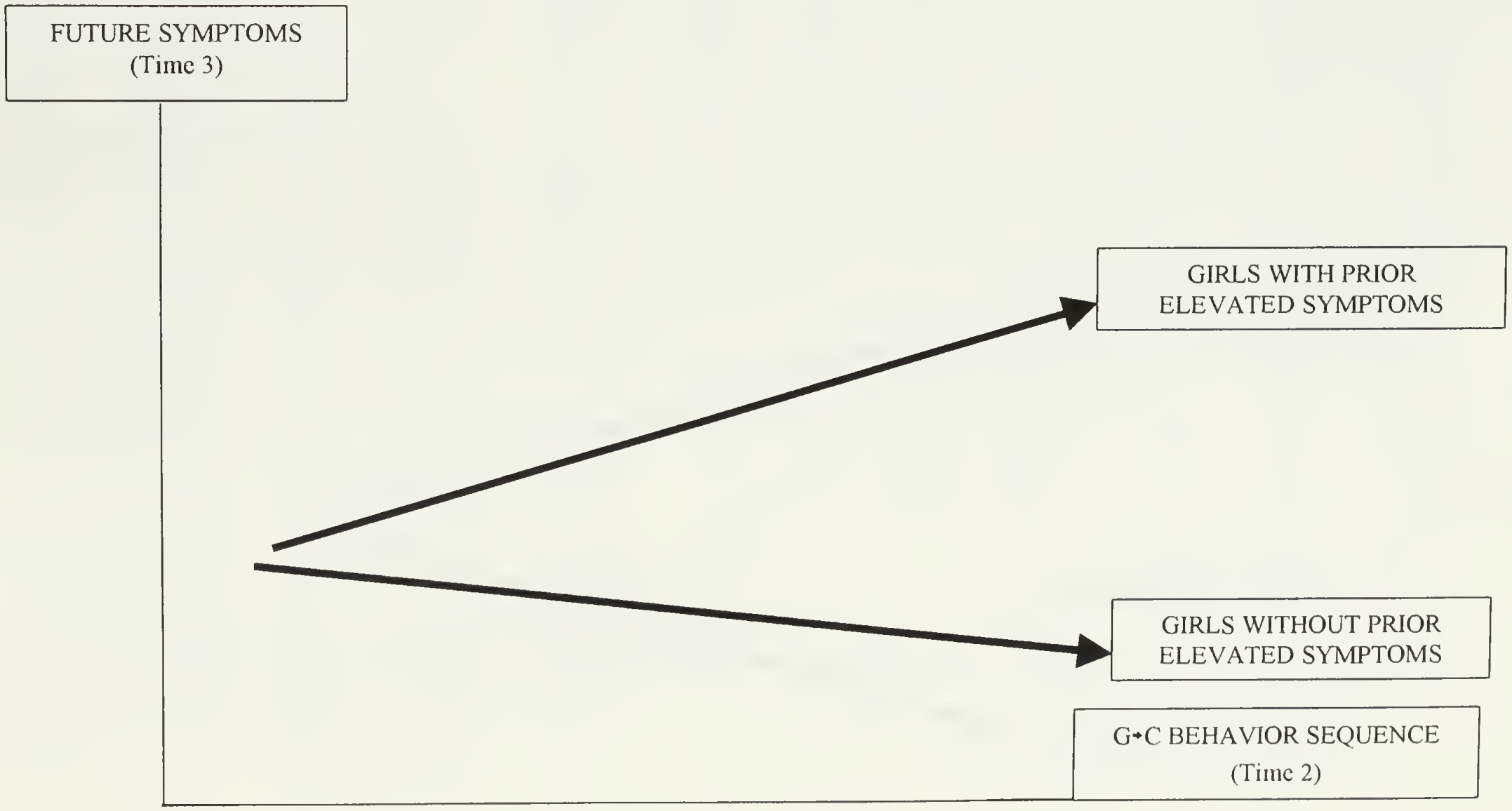
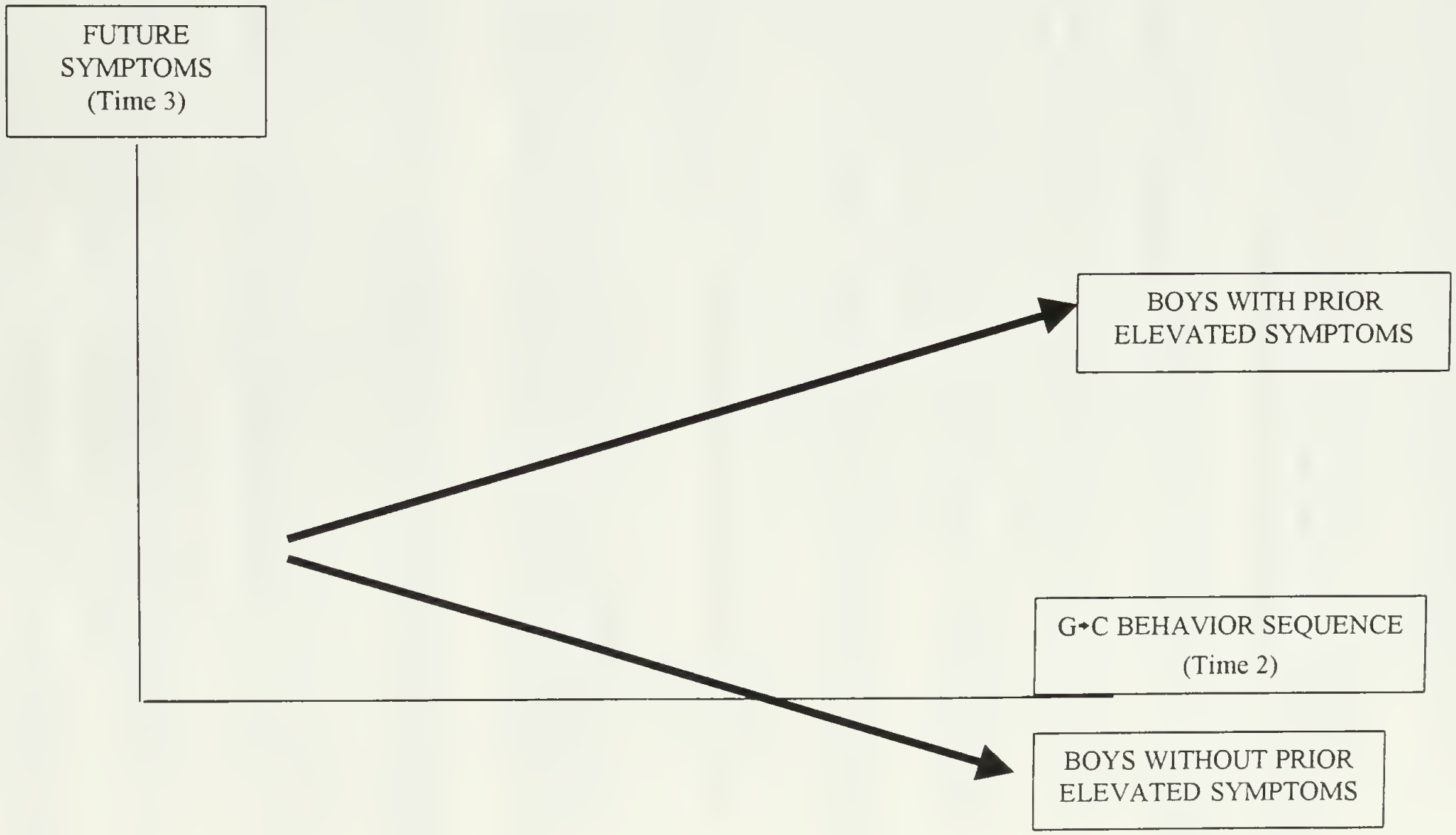


Figure 6

Giving-in→Conflict (G→C) Behavior Sequence and Prior Depressive Symptoms as Predictors of Future Depressive Symptoms (BOYS).



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