THE IMAGINARY AUDIENCE, THE PERSONAL FABLE,
AND A RIVAL HYPOTHESIS:
AN ALTERNATIVE EXPLANATION FOR
BEHAVIOR TYPICAL OF ADOLESCENCE

by

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ABSTRACT

Many explanations of young adolescent behavior are based on processes specific to young adolescents. This implies adults and other organisms do not exhibit behaviors exhibited by young adolescents. Based on Tolman’s model of purposive behavior, young adolescents are argued to follow the same behavioral patterns as other beings. Young adolescents are argued to be hypersensitive to their social environment, as indicated by the imaginary audience, but based on a different rationale. Further, it is argued that adolescents may take great risks, but not due to false perceptions of invulnerability. Based on Tolman and Erikson’s work, it is argued that individuals experience a state of disruption when faced with changing social reality and negative expectancy violations. Disruption is argued to lead to behaviors indicative of a “typical adolescent.”

The sample for this study includes 214 college students ages 18 to 21. College students were chosen as the sample to ensure if the hypotheses were supported, processes or events specific to young adolescence could not be the attributed cause. The respondents attended either a Southwestern University (n = 115) or a Northeastern College (n = 99). Results, obtained via cross-sectional survey, primarily support the proposed rationale and hypotheses.

College-student respondents, overall, were significantly more likely to express a willingness to risk physical pain the greater their self-reported need to obtain the rewards associated with the risk. Respondents were also more sensitive to information depending on their desired goal-state and their level of satiation regarding their desired goal-state. Results also support the prediction that respondents would be less able to separate others’
concerns from their own when the topic of interest was of self-importance than when the issue was not. Other findings reveal individuals learn more about relevant than irrelevant information and that they exhibit greater stress and anxiety, and less self-esteem and stability of self when in a state of disruption. These findings argue a new approach be taken when interpreting adolescent behavior.
CHAPTER I
INTRODUCTION

Adolescent behavior has proved a vexing problem to the scholars of the last century. While researchers of different decades have agreed that adolescents of their time are different than any other (Erikson, 1950, 1968; Hall, 1904), great debate has raged regarding the nature of adolescence. Adolescence has been presented as a time of storm and stress (Hall, 1904), unbridled impulsivity (Freud, 1937), a time of testing newly derived life hypotheses (Piaget, 1967), a time of “…boorishness, loudness, and faddish dress…” (Elkind, 1967, p. 1030), and a time of harmony with no more psychological breakdown than any other time in the lifespan (Bandura & Walters, 1959; Elkin & Westley, 1955).

Regardless of the reason or rationale, there is little debating that adolescence is a time of risky, possibly deadly, behavior for some adolescents (Grunbaum et al., 2004). In 2003, 16.5% of high school students nationwide reported a plan to commit suicide; 11.5% of high school females attempted suicide (Centers for Disease Control and Prevention, 2004). In the same year, 12.1% of high school students reported driving a vehicle after consuming alcohol and 30% reported being a passenger in a car driven by someone who had been drinking. Ten percent of males reported carrying a gun to school in 2003 and 11.9% of high school females reported being forced to have sexual intercourse. Considering this myriad of life threatening behaviors, the importance of understanding adolescent behavior cannot be over stated.
Over the past few decades, a great deal of attention has been focused on a stream of research that started with Elkind’s (1967) discussion of the role that adolescent egocentrism plays in young adolescent behavior. Arguing from a strictly cognitive view, Elkind posited the conquest of thought to be the major task of adolescence. Based on the work of Inhelder and Piaget (1958), Elkind proposed the emergence of formal operations during early adolescence allows the individual to construct all possibilities in a system, construct contrary to fact hypotheses, conceptualize one’s own thought, and reason about mental constructions. Elkind perceived adolescents’ misjudgments concerning other people’s thoughts as the center of adolescent egocentrism.

As a result of adolescent egocentrism, Elkind suggested young adolescents, lacking experience with their new cognitive tools, have difficulty in separating the ability to reconcile possible thoughts of others from actual thoughts of others. He theorized this inability to be the cause of behavior typically exhibited by adolescents and described adolescents as primarily self-occupied. Self-occupation, mixed with an inability to differentiate between their own thoughts and the thoughts of others, leads adolescents to think, “Everyone is watching me.” Because adolescents are self-focused and believe everyone is thinking as they are, Elkind theorized they come to act as if they are constantly on stage. Elkind proposed this imaginary audience is responsible for at least some of the self-consciousness exhibited by adolescents. Since adolescents believe everyone thinks as they do and adolescents are aware of their own imperfections, everyone else must also be aware of their imperfections.
Elkind (1967) also introduced another mental construct: the personal fable. He posited adolescents are not only self-critical, but self-admiring as well. This self-admiration, combined with an inability to differentiate between one’s own thoughts and the thoughts of others are, according to Elkind, responsible for “adolescent boorishness, loudness and faddish dress” (p. 1030). Elkind posited that because adolescents lack the ability to differentiate their perspectives from others’, and because adolescents believe others are as enthralled with them as they are with themselves, adolescents perceive themselves to be extremely special and unique. This same thought process causes adolescents’ belief of self-immortality and their willingness to participate in risky activities without fear of injury.

Elkind (1967) stated his explanation of adolescent behavior was as much based on his clinical experience as it was on research data and therefore should only be considered one potential rationale:

These constructs are offered, not as the final word on adolescent egocentrism, but rather to illustrate how the cognitive structures peculiar to a particular level of development can be related to the affective experience and behavior characteristics of that stage. (p. 1033)

Elkind’s openness to other explanations appears to be have been well-founded. Decades of research (e.g., Adams & Jones, 1981; Vartanian, 2000) show that while the behaviors observed by Elkind are frequently witnessed during adolescence, adolescent egocentrism is questionable as an explanatory mechanism. Unfortunately, others were less hesitant and assumed Elkind’s explanation was accurate. Elkind’s statement about
adolescent egocentrism was called a “classic” (Enright, Lapsley, & Shukla, 1979) prior to empirical testing. In accord, discussion of the constructs, stated essentially as facts, can be found in current textbooks written for future teachers. For example, one text has proclaimed adolescents assume “...that everyone else is as interested as they are in their thoughts, feelings, and behavior” (Woolfolk, 2001, p. 37).

Lapsley (1993) attributed willingness to accept Elkind’s explanation to the intuitive appeal of the constructs and the constructs’ potential to explain a broad range of adolescent behavior. This is problematic given that Elkind’s explanation has been taught to future teachers and has been used as a theoretical basis for adolescent prevention campaigns and interventions. A new, equally intuitive explanation is warranted.

This dissertation presents a rival explanation for behaviors indicative of the imaginary audience and the personal fable. The rationale differs from Elkind’s as well as other explanations that have been proposed. I question an implicit assumption of most previous rationales: behaviors indicative of the imaginary audience and the personal fable are unique to adolescence. This assumption has also been implicit in each of the most popular rival explanations to Elkind’s (O’Connor & Nikolic, 1990; Lapsley, 1993; Lapsley & Murphy, 1985). Each took a theory or model specific to adolescence (i.e., Blos, 1962; Erikson, 1968; Piaget, 1967; Selman, 1980) and used the adolescent-specific theory to explain adolescent behavior. What if these behaviors are not adolescent-specific? Can learning if other humans and animals exhibit similar behaviors increase understanding of adolescent behavior?
It has been consistently proposed that some form of change activates behaviors indicative of the imaginary audience and the personal fable. Cognitive change (Elkind, 1967), changes in the nature of interpersonal relationships (Lapsley & Murphy, 1985), changes in identity (O'Connor, 1990), and changes in interpersonal connectedness (Lapsley, 1993)—all have been posited as catalysts for behaviors indicative of the imaginary audience and the personal fable. After providing a review of each of these explanations, I put forth past research suggesting that experiencing change can lead animals and adults to exhibit behaviors indicative of the imaginary audience and the personal fable. If organisms other than young adolescents exhibit these behaviors, explanations based on processes unique to early adolescence, such as the onset of formal operations have to be, at the very least, adjusted.

Consider the following: Tolman (1932) found that when a rat experienced change in the form of increased hunger it was quicker at finding food than a satiated rat (Tolman, 1932). Stormark and Torkildsen (2004) found adults with eating disorders processed food stimuli in a more biased fashion than adults without eating disorders. Gomez and Gomez (2002) found adults who experienced change that caused a state of anxiety focused more on unpleasant words than non-anxious individuals. Simmons, Rosenberg, and Rosenberg (1973) found young adolescents who experienced change causing low self-esteem were more self-conscious than adolescents who had high self-esteem. Could the same behavioral processes be responsible for all these behaviors as well as those indicative of the imaginary audience and the personal fable? Imagine an adult who recently quit smoking. This adult will likely notice the smell of cigarettes from a greater distance than
someone who never smoked or someone who quit long ago. Is adolescent egocentrism the cause? If not, why has it been assumed when adolescents exhibit hypersensitivity to their social environment it is due to adolescent-specific phenomena?

As discussed earlier, Elkind proposed that adolescents engage in risky behavior due to feelings of invulnerability. A different explanation is adolescents know the risk and accept it out of a desire for the outcome associated with the risky behavior. Consider the following experiment: Warner (1928) had a rat placed in a cage with an electric grid placed between the rat and some food. The rat could not get to the food without discomfort. At first the rat did not cross the electric grid. As a greater amount of time passed without food, the rat began crossing the electric grid. Is it more plausible that 1) the rat crossed the electric grid with the expectation of hunger satiation and was willing to endure the discomfort due to an increased desire for food, or 2) as time passed the rat began to believe it was invulnerable and therefore crossed the grid believing no harm would come to it? Warner (1928) proposed the rat experienced change: an increase in hunger. With this change came a greater desire for food, and therefore a greater willingness to endure discomfort. Applied to adolescence, is it not possible that changes experienced by adolescents also lead to a greater desire for outcomes? Can it be that adolescents do not perceive themselves invulnerable but rather have such a desire for a certain outcome that they are willing to endure the discomfort?

Rats and adolescents are obviously different in many ways. However, consider the following hypothetical situation: a parent comes home to find the house on fire and the children inside. The parent runs into the burning home. Is it more plausible that the
adult suddenly perceives him or herself invulnerable to fire or is it more likely that the
adult is willing to endure the risk of harm to reach a desired goal-state—the safety of the
children? If it is believed that the rat crossed the grid not due to perceptions of
invulnerability but due to hunger, and it is believed an adult will enter a burning home,
not due to perceptions of invulnerability, but out of a willingness to accept the risk for the
safety of the children, why are adolescents assumed to behave in risky fashion due to
perceptions of invulnerability? Remove this assumption and a different picture of
adolescent behavior emerges.
CHAPTER II
REVIEW OF RELEVANT LITERATURE

This review begins with a discussion of past research on the imaginary audience and the personal fable. Next, Tolman’s (1932) model of purposive behavior is presented. The tenets of this model lead to several hypotheses regarding adolescent behavior. These hypotheses are followed by a discussion of disruption. Disruption is a term used by Tolman to describe what occurs when animals experience unexpected changes in their environment. I argue Tolman’s description is similar to Erikson’s (1968) explanation of what can happen when an individual experiences a change in social reality. Based on the work of Tolman and Erikson, additional hypotheses will be put forth.

The Imaginary Audience and the Personal Fable

Elkind initially proposed the terms imaginary audience and personal fable to describe adolescent behavior that he mainly observed as a clinician. In the decades after Elkind set forth his explanation, others proposed different explanations. These explanations focused on relatively the same behavior, but with different explanatory mechanisms. Each explanation is now briefly reviewed. After discussing each one of the three explanations, the empirical support garnered by each rationale will be put forth.

Explanation #1

As discussed earlier, Elkind (1967) approached adolescent behavior from a strictly cognitive view. This view placed conquest of thought as the major task of adolescence. Elkind posited that the emergence of formal operations during adolescence provides adolescents with additional tools for thinking. These new tools--the ability to
construct all possibilities in a system, construct contrary to fact hypotheses, conceptualize one's own thought, and reason about mental constructions--are considered by Elkind to be the center of adolescent egocentrism.

Elkind proposed the new tools of thought that emerge with the onset of formal operations give young adolescents, inexperienced with such thought processes, difficulty in separating thoughts of others from their own. Therefore, since adolescents are self-focused, they perceive themselves as the center of everyone else's focus and consequently act as if they are constantly performing on a theatrical stage. Further, since adolescents are aware of their personal flaws, they assume everyone else must also be aware of these flaws.

Elkind also suggested that adolescents are self-admiring. Such self-admiration, complemented by an inability to separate one's own thoughts from those of others, leads the adolescent to believe everyone else is equally admiring. If the adolescent is so admired then the adolescent must be unique. If the adolescent is so unique, separate laws of reality must apply, hence adolescents' belief in personal invulnerability.

Elkind proposed that as adolescents get older the imaginary audience, and personal fable subside. He explained the imaginary audience as the adolescents' hypothesis about the world. As adolescents learn that their hypothesis is incorrect, the imaginary audience is reconstructed until it matches social reality. Elkind suggested the personal fable subsides with experience in intimate relationships. Intimate relationships teach adolescents about the feelings of others, feelings similar to the adolescents' own, thus ending the belief that no one thinks as he/she does.
Empirical Support

At first, little attention was paid to Elkind's description of the imaginary audience and personal fable, possibly due to the unavailability of instruments to test the constructs. This changed a little over a decade later. Elkind and Bowen (1979) introduced a scale created to measure the imaginary audience. Enright, Lapsley, and Shukla (1979) created scales to measure the imaginary audience, the personal fable, and self-focus.

Elkind and Bowen's imaginary audience scale will be discussed first. This scale is a combination of a scale created by Simmons, Rosenberg, and Rosenberg (1973) and six new items created by Elkind and Bowen. The scale created by Simmons and colleagues is a six-item measure of self-consciousness and asks respondents to imagine how they would feel in situations of self-disclosure. Elkind and Bowen posited that the items created by Simmons and colleagues did not differentiate between what Elkind (1978) referred to as the transient self and the abiding self. The transient self refers to short-lived occurrences, such as a stain on a pair of pants. The abiding self refers to more stable traits, such as how one would feel if asked to read in front of the class. The scale created by Simmons and colleagues was renamed the Abiding Self Scale. The Transient Self Scale, created by Elkind and Bowen, also consists of six items. These items ask respondents how they would behave in different, potentially embarrassing situations, such as getting a bad haircut before a large social event.

Elkind and Bowen (1979) tested their scale by administering it to 697 4th-, 6th-, 8th-, and 12th-grade students from a large, middle-class, and suburban school district. Four months later all students again completed the scale, as well as at least one of three
additional scales. Students in 4th-, 6th-, and 8th-grades were randomly selected at the classroom level to receive one of three instruments: the Coopersmith Self-Esteem Inventory (1967), the Piers-Harris Children’s Self-Concept Scale (1964), or the Nowicki-Strickland Locus of Control Scale for Children (1973). Participating 12th-graders were given all of the scales during the retest.

Responses to the Abiding Self Scale significantly correlated with responses obtained via the Piers-Harris ($r = -.32$) and the Coopersmith Scale ($r = -.34$). Responses to the Transient Self Scale were only significantly correlated with responses to the Piers-Harris Scale ($r = -.16$). The lack of internal consistency found when examining responses to both imaginary audience subscales will be discussed later.

The hypothesized relationship between the age of the adolescent and the imaginary audience was not supported. For both the Transient Self Scale and The Abiding Self Scale scales, 8th-graders reported a greater presence of the imaginary audience than 4th-, 6th-, and 12th-grade students. No significant grade difference was found when comparing imaginary audience scores of 4th-, 6th-, and 12th-graders. Surprisingly, Elkind and Bowen state:

...young adolescents were significantly less willing than older adolescents to reveal either the transient self or the abiding self to an audience. This finding provides additional support for the hypothesis of heightened self-consciousness in early adolescence and for the construct of an imaginary audience during this time period. (p. 44)

A myriad of studies followed. These results were equally ambiguous.
Adams and Jones (1981) found no significant correlations between empathy and responses to either imaginary audience subscale. Adams and Jones’ results indicate a linear trend with perceptions of the imaginary audience increasing with age. On both subscales, respondents 17 and 18 years of age had significantly higher imaginary audience scores than those 11, 12, and 13 years of age. This finding is counter to Elkind and Bowen’s results. Peterson (1982) found no significant difference between imaginary audience scores of adolescents and adults. Unfortunately, this research went relatively unnoticed.

Regarding formal operations, Elkind’s proposed catalyst for the imaginary audience, Riley, Adams, and Nielsen (1984) found formal operations to be associated with decreased, rather than increased, egocentrism. Other researchers found no relation between the imaginary audience and formal operations (Goossens, 1984; Gray & Hudson, 1984; Peterson, 1982).

I now turn to the second scale created to test Elkind’s theoretical rationale. Enright, Lapsley, and Shukla (1979) created a scale containing items focusing on the imaginary audience, the personal fable, and adolescent self-focus. The imaginary audience subscale consists of items asking respondents how important it is to be able to think about fears and fantasies regarding others’ reaction to their behavior. The personal fable measure asks respondents to indicate how important it is for others to understand their uniqueness. Self-focus items ask respondents to indicate how important it is to be able to think about their own feelings. The composite of these three subscales is referred to as a total measure of egocentrism.
Enright and colleagues administered this instrument to 6th-graders, 8th-graders, and college students. Respondents’ age was significantly correlated with responses to the imaginary audience subscale \( r = -0.37 \) and the personal fable subscale \( r = -0.24 \). Counter to expectations, responses to the self-focus subscale were positively correlated \( r = 0.24 \) with respondent age. Likely due to responses to the self-focus subscale being in the opposite direction of the other two, total egocentrism was not correlated with age.

To further examine differences, Enright, Lapsley, and Shukla conducted an Analysis of Variance to compare responses between students of different grade-levels. No significant difference emerged when comparing scores across grades for the total egocentrism measure or the personal fable subscale. Further, while a significant difference emerged when comparing responses of 6th-graders and 8th-graders to college students, no significant difference between 6th- and 8th-graders was revealed. Regarding the self-focus subscale, the only significant difference indicates college students have greater self-focus than 6th-graders, but that 6th- and 8th-graders do not differ. One possible explanation for the lack of significant findings may be the limited sample size—20 participants for each of the three grades.

Enright and colleagues conceded that adolescent egocentrism might not be a one-dimensional construct that decreases during adolescence. Rather, the possibility of different aspects of adolescent egocentrism emerging at different phases of adolescence was proposed. Nevertheless, the authors reported their results to be in accord with the adolescent egocentrism explanation of adolescent behavior: “In summary, the emergence
of the imaginary audience and the personal fable seem to be empirically supported phenomena characterizing early adolescence” (p. 695).

Other researchers also found results counter to expectations when using Enright, Lapsley, and Shukla’s (1979) instrument. Dolcini et al. (1989) found highly egocentric adolescents reported perceptions of decreased, rather than increased, perceptions of invulnerability. O’Connor and Nikolic’s (1990) study revealed no significant relationship between formal operations and egocentrism. Frankenberger (2000) reported findings that suggest the personal fable and the imaginary audience are not adolescent-specific phenomenon. As mentioned earlier, the few extant efforts suggesting that the imaginary audience and the personal fable are not adolescent-specific did not garner much attention.

Explanation #2

After noticing the lack of empirical support for the imaginary audience and personal fable constructs, Lapsley and Murphy (1985) suggested a second explanation based on a social cognitive model of development. They focused on the same adolescent behaviors but put forth a different explanation. Lapsley and Murphy proposed the imaginary audience and personal fable needed to be placed in the context of interpersonal understanding. Selman’s (1980) model of interpersonal understanding was used as a framework.

Selman theorized that at level zero, approximately 4 to 6 years of age, children do not differentiate self from other. Basically, children assume everyone else’s behavior will always be the same as theirs. Level one, approximately 6 to 8 years of age, occurs when children can infer with high accuracy, what another’s view might be. Further, children at
this stage realize their behavior might be the target of other's thoughts, but are unable to figure out the content of those thoughts. At level two, approximately 8 to 10 years of age, children can take another's perspective and modify their behavior as needed. At level three, the 4th stage, children are able to see themselves as actors and objects. The child, approximately 10 to 12 years of age, can reflect on self-observations. Young adolescents become aware that they can monitor their own experience. This ability is theorized to be responsible for heightened self-consciousness during adolescence. At this stage, the adolescent begins to see the mind as having the power of self-reflection and self-control. Adolescents, approximately 12 years of age and above, believe they can control their own thoughts and emotions. The final level, level four, consists of a coordination of all third-party perspectives. While level three permits self-reflective self-control, those in level four have additional self-control, having learned that all mental experiences are not available for self-observation.

Based on this model, Lapsley and Murphy (1985) proposed the imaginary audience is the result of self-consciousness, brought on by the self-aware aspects of perspective taking exhibited during level three. They suggested the imaginary audience is better conceptualized as the anticipation of how others will react to the self in fantasized situations. Further, while hypothetical thinking may be necessary for this fantasized anticipation, it is not sufficient. The perspective-taking ability, associated with level three, is both necessary and sufficient for the occurrence of the imaginary audience. Regarding the personal fable, Lapsley and Murphy posited the increased sense of personal agency experienced by adolescents might be responsible for feelings of
invulnerability. Their lack of definitiveness regarding the personal fable will be discussed later.

A few years later, this social-cognitive approach was named the “new look” at the imaginary audience and the personal fable (Lapsley & Rice, 1988). Selman’s (1980) interpersonal stages were still used as an explanatory mechanism. However, Blos’ (1962) description of the separation-individuation process, although not mentioned in the initial proposal of the “new look”, became the explanation’s centerpiece.

Lapsley (1993) posited separation-individuation is “clearly one of the hallmarks of the adolescent experience” (p. 565). Based on the work of Blos (1962), Lapsley posited that adolescents must succeed in two different separation-individuation tasks. First, adolescents must maintain current interpersonal relations while carving out new ego boundaries. The adolescent fantasy is considered to be a practice tool for doing so. These fantasies, “object relational ideation,” allow the adolescent to maintain interpersonal connectedness during physical separation. Imagining and fantasizing about interpersonal transactions assist adolescents in accomplishing this first task.

The second task, the reestablishment of firm ego boundaries, was described by Blos (1962) as follows: “Self-induced ego-states of affective and sensory intensity allow the ego to experience a feeling of self and thus protect the integrity of its boundaries and its cohesion.” Lapsley proposed this leads adolescents to experience a sense of personal uniqueness and a sense of invulnerability.
Empirical Support

Lapsley, FitzGerald, Rice, and Jackson (1989) tested their social-cognitive approach by creating a 42-item New Imaginary Audience Scale. Specifically, Lapsley and colleagues created this instrument to assess the frequency with which adolescents engage in relational ideation and interpersonal fantasies. The measure asks respondents how frequently they think about different interpersonal situations. For example, respondents are asked how often they thought about rescuing a friend from danger and, separately, being rejected by a boyfriend or girlfriend.

The same authors also created a New Personal Fable Scale. This 46-item scale assesses feelings of omnipotence, personal uniqueness, and invulnerability. Omnipotence is measured via items such as, “I think I am a powerful person” and “I believe no one can stop me if I really want to do something.” Personal uniqueness items read, “Nobody will ever know what it is like being me” and “No one has the same thoughts and feelings that I have”. Invulnerability items include, “It is easy for me to take risks because I never get hurt” and “I can get away with things that other people can’t.”

The initial test of this instrument revealed 6th-graders had significantly higher imaginary audience scores than 8th- and 12th-graders. The 12th-graders had the lowest imaginary audience scores. Sixth graders had significantly higher levels of separation anxiety than 8th-, 10th-, and 12th-graders. The 10th-graders had significantly higher separation anxiety than the 8th- and 12th-graders. Mean splits of the imaginary audience scales revealed those with higher imaginary audience scores reported significantly higher separation anxiety and narcissism. Further, imaginary audience scores, as assessed with
this instrument, were significantly correlated with engulfment ($r = .35$), self-centeredness ($r = .23$), separation anxiety ($r = .49$), and narcissism ($r = .58$). Lapsley and colleagues (1989) concluded these results support their imaginary audience rationale.

Personal fable scores, as measured by this “new look” instrument, were not significantly related to grade level. Personal fable scores were, however, significantly correlated with separation anxiety ($r = -.31$) and self-centeredness ($r = .41$). When participants were divided into two groups, those with high personal fable scores and those with low personal fable scores, a significant difference was also revealed. Those with categorically low personal fable scores reported significantly higher levels of narcissism, self-centeredness, and separation anxiety than those with high personal fable scores.

Additional research efforts found moderate support for this “new look” approach. Data support the proposed relationship between heightened imaginary audience scores and a lack of interpersonal connectedness (Lapsley et al., 1989; Vartanian, 1997). On the contrary, Jahnke and Blanchardfields (1993) did not find interpersonal understanding, as measured by Selman’s instrument (Selman, 1980), to be related to one’s level of imaginary audience. However, Jahnke and Blanchardfields’ outcome measure was not the “new look” scales but rather the scale created by Enright and colleagues (1979). This “new look” approach received limited attention (Vartanian, 2000), possibly due to the length of this 88-item instrument.

**Explanation #3**

O’Connor and Nikolic (1990), also after citing the lack of empirical support for Elkind’s explanation of adolescent egocentrism, proposed a third explanation. This effort
kept the behaviors of interest unchanged while altering the explanation for the behaviors. This approach, based on Erikson's (1968) work on identity development, proposed the myriad of biological, psychological, and social changes lead adolescents to begin asking themselves, “Who am I?” O’Connor and Nikolic suggested these changes, mixed with increasing social pressures and freedoms, lead adolescents into a state of self-consciousness. This self-consciousness then leads adolescents to assume others will be watching them as much as they watch themselves. These social-concerns and demands lead adolescents to confuse their concerns with the concerns of others. Further, a new explanation for adolescent invulnerability was, albeit indecisively, put forth: “Their feelings of uniqueness and invulnerability may stem from the fact that having an identity, or having the opportunity for an identity, is so new to them” (O’Connor & Nikolic, 1990, p. 150).

Empirical Support

This explanation received some empirical support (O’Connor, 1995; O’Connor & Nikolic, 1990). Results from both studies suggest a positive relationship between higher egocentrism and higher identity crisis scores. The theorists proposed the findings support the relationship between social-freedom, social demands, and novelty of identity development with higher egocentrism.

Summary

All together, over the past four decades, three different rationales have been proposed to explain two adolescent constructs. The behaviors have not been debated. What has been debated is the cause of the behaviors. The imaginary audience, a
heightened sense of self-consciousness, combined with hypothetical daydreaming, has been theorized to be the result of three processes: egocentrism, separation-individuation, and identity development. However, the one variable all three explanations have in common is the notion of change specific to the adolescent years. Egocentrism is due to change in cognitive processes occurring during adolescence, separation-individuation is due to change in interpersonal relations occurring during adolescence, and identity development is due to changing views of the self, occurring during adolescence. While these processes differ, all three assume behaviors indicative of the imaginary audience and personal fable to be unique to adolescence. Can it be extreme environmental change, regardless of the specifics, leads humans and other organisms to behave in a certain manner? Could this manner be the same manner in which young adolescents behave?

A Different Approach

In many ways, current adolescent research is not much different than 30 years ago. Behaviors are known, an explanation is not. Returning to Elkind's observations, he observed young adolescents 1) act in a self-focused manner, 2) behave as if unable to differentiate between thoughts of others and their own, 3) respond to certain environmental stimuli in a hypersensitive manner, 4) engage in social fantasies focusing on others' response to their behavior, 5) act as if they are individually unique, and 6) behave as if invulnerable to physical harm.

Elkind admitted his explanation was just one potential explanation. Unfortunately, rather than his work generating discussion of what might be responsible for the behaviors he observed in his clinic, one of the first tests of his explanation (Enright, Lapsley,
Shukla, 1979) removed most of his caveats. I suggest the first step should have been to investigate other behavioral research to assess if behaviors exhibited by adolescents occur elsewhere. If behaviors, suggested to be specific to young adolescent, are found in college students, it does not suggest the behavior is any less prevalent during adolescence, but it calls for a theory non-reliant on adolescent-specific processes. Studies with both animals and adults, to be discussed next, indeed show that young adolescents do not have a monopoly on behaviors indicative of the imaginary audience and the personal fable.

Tolman’s Model of Behavior

Tolman’s work, *Purposive Behavior in Animals and Men*, stems from a molar, rather than a molecular, behaviorist perspective (Tolman, 1932). The molar perspective assumes behavior “...is more than and different from the sum of its physiological parts” (p. 7). This perspective is in accord with the work of several other scholars of the period including Holt (1915) and Kantor (1924). The molar perspective also places a wide net over what is considered behavior. An animal running a maze, a human driving to work, a cat getting out of a puzzle box, two people discussing psychological theory, all are considered to be behaviors from the molar perspective.

This perspective argues that 1) behavior is purposeful, and 2) the causes of behavior are environmental stimuli and initiating physiological states. As explained by Tolman, behavior, “...always seems to have the character of getting-to or getting-from a specific goal-object, or goal-situation” (p. 10). A goal-object or goal-situation refers to a
demand—an innate or acquired urge—for approaching or avoiding a physiological condition or environmental object.

Based on the molar perspective, Tolman presented a model for purposive behavior supported by many experiments involving animals. The most relevant aspects of Tolman’s model center on combining animal experiments with Craig’s (1918) doctrine of appetites and aversions. A discussion of appetites and aversions is presented after the main tenets of animal behavior are put forth.

**Tolman’s Tenets**

*a. Organisms respond differently to stimuli, and notice different stimuli, depending on their goal-state.*

Tolman explained that rats, and men, “...have hundreds, not to say thousands, of stimuli infringing on them every instant of their waking lives; and yet to by far to the majority of these stimuli they do not, at the given moment, respond” (1932, p. 35).

Tolman theorized, for example, a hungry rat would be more responsive to food-stimuli than a non-hungry rat. Meanwhile, a satiated rat, a rat that just completed eating, would pay no attention to food-stimuli. Tolman put forth two reasons why the hungry rat recognizes and responds to the food-stimuli: 1) the rat is hungry, and 2) the rat has learned that eating certain food will lead to hunger-satiation. If the rat is hungry but learns that certain food will not satiate its hunger, the food will not be part of the universe of stimuli focused on by the hungry rat. Similarly, certain stimuli may have caused a negative outcome in the past. In this case, the rat will notice stimuli perceived relevant to an undesirable outcome.
To support this tenet, Tolman discussed an experiment in which a hungry rat and a non-hungry rat were placed in a maze. The hungry rat immediately ran through the maze and found the shortest path to the food. The non-hungry rat did not run, nor take the quickest path to the food. The hungry rat focused only on stimuli relevant to its hunger drive state. The non-hungry rat was not focused on food stimuli and therefore focused on other aspects of the environment, resulting in an exploration of the other tunnels.

b. Organisms’ rate of learning will be determined by the demand for the outcome.

This tenet refers to the notion that a hungry rat will learn its way around the maze quicker than a non-hungry rat. Tolman presented results from three different experiments to support this assertion. The first involved placing hungry rats in a maze. The hungry rats were placed in the maze for one trial on the first day, and two trials thereafter. The number of errors made by the rats was recorded. Also, the rats received varying levels of reward. The rats receiving the greatest reward, even though all the rats were equally driven by hunger, outperformed all others. In another experiment the rats were fed either immediately after reaching a goal-box or after delays of one to seven minutes. Results indicate the rats rewarded immediately learned at a quicker pace than rats fed after a delay. Another experiment consisted of comparing the performance of equally hungry rats fed either bran mash or sunflower seeds upon maze completion. Bran mash was considered to be the less desirable of the two foods. The rats fed bran mash performed worse than the rats fed sunflower seeds.

These experiments, among many others, led Tolman to conclude that even with equal hunger conditions, a rat’s rate of learning, as measured by performance, is
determined by the strength of the demand for the expected outcome. The rats fed immediately, or fed the more satiating food, learned quicker because the expected outcome was more desired. When the outcome was perceived as being of greater value, learning and performance increased. When the outcome was perceived to be of lesser value, learning and performance decreased. A similar process may explain why some adolescents will not study mathematics but will study every nuance of popular culture. The expected outcome of knowing popular culture is more demanded than the expected outcome of knowing mathematics.

\textit{c. Organisms’ willingness to endure discomfort will be influenced by the demand for the expected outcome.}

This tenet argues that animals with the greatest demand for a goal-situation would be willing to endure the greatest amount of discomfort. Tolman made this argument by presenting the outcome of experiments forcing animals to go increasingly longer periods of time without food or water. As the animals’ demand for food or water increased, the animals’ willingness to endure discomfort increased. While Tolman only discussed a limited number of experiments supportive of this finding, Warner (1928) found similar results. As discussed earlier, Warner (1928) conducted an experiment in which a rat was placed in a cage with an electric grid placed between the rat and some food. The set-up was such that the rat could not get to the food without discomfort. As a greater amount of time passed without food, the rat began crossing the electric grid. Warner (1928) suggested the rat crossed the electric grid due to an increased hunger drive. With this
change, a greater desire for food, the rat became more willing to endure discomfort. I argue a similar process is responsible for adolescent risk-taking.

d. Performance will increase as demand for the outcome increases.

This assertion was supported by experiments that changed the reward of completing a maze midway through several trials. Tolman discussed experiments that involved giving equally hungry rats the same rewards after running a maze. However, after the 4th day, one group of rats received the same reward but with less of a delay after completion. As discussed earlier, shortening the provision of the reward makes the reward more demanding. The average error rates of rats that started to receive the more satiating reward immediately dropped to more than one-half of the prior rate. The other group of rats continued to receive food after the same delay as before, these rats continued to make the same number of mistakes. On the 7th day these rats were given food with a shorter delay: the rats’ error rates dropped to a rate equal to the other group.

e. Performance will decrease as demand for the outcome decreases.

This assertion was supported by experiments following similar, albeit opposite, procedures as the experiments previously mentioned. Tolman discussed one experiment that involved providing two groups of rats sunflower seeds upon completion of a maze. The frequency of errors and maze completion times were recorded. On the 10th day, one group of rats had the sunflower seeds replaced with a less satiating food. Once this occurred, the rats provided with the less desirable food exhibited a reduction in performance time and an increase in errors. Placed in an adolescent realm, one can
imagine what happens to a young adolescent’s academic performance when the demand for social acceptance overrides the demand for parental approval.

*f. Organisms with a stronger drive state will behave differently than organisms with a weaker drive state.*

This tenet is supported by an experiment discussed earlier. Tolman described an experiment in which two sets of rats were placed in a maze, one set hungrier than the other. The maze had both a long alley and a short one—the food was first placed at the end of the short alley. As expected, the hungrier rats learned quicker than the less hungry rats. However, a second finding was discovered. The less hungry rats, even after learning that either alley can lead to food, continued to wander down the longer alley. Tolman concluded this experiment, as well as similar others, indicates that when the rat is not driven by food, walking down the long alley is rewarding in and of itself. This is not the case when the rat is hungry. In other words, when the demand for food is low, the longer path is preferred. However, when food is demanded, the shorter path is chosen.

*g. Organisms develop “cognitive expectations” for stimuli or behavior to lead to more or less reward.*

Tolman asserted, as previously discussed, an increase or decrease in performance and/or willingness to endure discomfort suggests that organisms develop cognitive expectations for different outcomes. When a less desirable reward was replaced with a more desirable reward, the rats’ performance increased and remained at the superior level. This could only occur if rats come to expect a more desirable reward to be at the end of the maze.
The first experiment discussed by Tolman involved recording the number of observed errors of a group of thirsty rats over several days. When the drive and reward were held constant and as the rats learned the maze, the frequency of errors decreased. The frequency of errors went from approximately eight on the 1st day to approximately three on the 9th day. However, on the 10th day, the rats were not thirsty but hungry. This time when the rats were placed in the maze, approximately four errors were made. Even though the drive was hunger instead of thirst, the rats followed a pattern similar to the one found to lead to thirst-satiation. On the 10th day, the hungry rats found food at the end of the maze. On the 11th day the frequency of errors returned to the rate exhibited on the 9th day.

When organisms develop “cognitive expectations” for stimuli or behavior to lead to more or less reward, and these expectations are violated, disruption occurs.

Tolman first described disruption as occurring in reference to the previously discussed experiments. For example, the rat receiving the less preferred food was observed responding in a confused manner. Switching to experiments with monkeys, Tolman discussed several experiments that also show disruption occurring when previous expectations are not met. One experiment used what is referred to as the indirect method. This involves training an animal to select one box over another by only rewarding the selection of the correct box. Once the animal correctly discriminated between the “right” and “wrong” box, the experimenter began to provide the reward after a slight delay. Over time the delays got longer and longer but the monkey continued to get the expected reward, a banana. After several instances of this procedure, the monkey was again called
over to receive the reward. However, the monkey was offered lettuce instead of the expected banana and allowed the lettuce to drop to the floor. Tolman stated that if the monkey were hungry enough, the monkey would have eaten the lettuce. This discussion is continued after the next tenet is presented.

*i. Disruption leads to an upset in behavior that will lead to an increase in learning focused on the cause of disruption.*

In this experiment, the monkey looked at the lettuce but did not touch it, looked around the area where the banana usually came from, picking up and putting down the container where the banana was usually found, and then inspected the rest of the area associated with the banana. Next, the monkey looked around, turned towards the observers, and “shrieked at them in apparent anger.” The monkey then walked away, leaving the lettuce untouched. Again, this response is what Tolman referred to as disruption, a “breakdown and upset in behavior” caused by environmental change. Tolman proposed that only negative events would cause an upset in behavior. If an animal receives better than expected nourishment, disruption will not occur. I propose adolescents and adults can exhibit a similar behavior pattern when faced with extreme and unexpected change. The emergence of formal operations, interpersonal separation, and an identity crisis can all lead to a state of disruption.

*j. Disruption can be the result of a perceived change as well as an actual change.*

In the previously discussed experiment, the monkey expected a banana but received lettuce. The reward was indeed changed. Tolman described another experiment where rats successfully ran a maze several times. The experimenter kept the maze the
same, except unusual odors were introduced into the maze. The rats exhibited disruption. Even though nothing was changed in the actual maze, the odors caused the perception of a change.

*Appetites and Aversions*

As discussed earlier, Tolman perceived behavior to be purposeful and the causes of behavior to be environmental stimuli and initiating physiological states. Tolman theorized initiating physiological states specifically cause either an appetite or an aversion.

The physiological state associated with an appetite is metabolically aroused when conditions evoke a demand for a specific physiological satiation. Physiological states associated with appetites are metabolically conditioned and occur in cycles. For example, if a rat is not given food for a stretch of time, the hunger drive will be aroused, and will evoke the demand for an experience that will satiate the hunger, namely eating.

An aversion, however, does not occur due to a primary drive such as hunger. The physiological state associated with an aversion occurs when a specific environmental stimulus leads the organism to fear the occurrence of a physiological disturbance. Unlike an appetite that occurs in cycles, an aversion is relatively enduring and constant. If the unexpected disturbance is of a sufficient intensity, disruption can occur. As long as the initiated state remains, so will the demand to avoid the feared disturbance, and subordinately the demand to avoid the stimuli threatening to cause a psychological disturbance. For example, if a rat receives an intense electric shock for entering a section of a maze painted red, seeing stimuli reminiscent of the red part of the maze will cause an
aversion. The rat will experience a demand against the physiological disturbance
associated with the electric shock. Further, the rat will be hypersensitive such that it
avoids any objects it perceives to be related to the feared physiological disturbance, such
as anything red or possibly any maze-type object. The rat will also be hypersensitive to
any environmental stimuli perceived to be associated with either being able to avoid the
physiological state or the objects perceived to be associated with the cause of the
disturbance.

Placed in the human realm, imagine a young adolescent who is unexpectedly
made fun of by other students on the first day of school. The adolescent will be expected
to experience a physiological disturbance, possibly associated with the environmental cue
of the school. If this occurs, the adolescent will then be hypersensitive to any stimuli
related to the physiological state, or objects associated with the cause of the disturbance.
Subsequently, if adolescents are abused for having bad haircuts they will likely become
hypersensitive to their appearance. In accord with such a possibility, Bell and Bromnick
(2003) took a grounded theory approach to the imaginary audience and reported that
youth were hypersensitive to aspects of their appearance because aspects of their
appearance had very real consequences.

Explicitly, an aversion can be considered a disturbance caused by expectations. It
is the expectation of a negative occurrence that sets off the aversion. If an object led to a
negative occurrence in the past, the animal or adolescent cannot know for certain the
same outcome will occur again. However, the expectation of the outcome leads to an
aversion. Similarly, a young adolescent cannot be sure that a bad haircut will lead to
school-yard abuse, but if this has occurred before, possibly even only vicariously, this expectation can lead to a persistent physiological reaction as long as relevant environmental stimuli are perceived to be present.

Generalizing to Human Behavior

As stated earlier, the goal of this current research effort is to propose an explanation for behaviors frequently considered unique to adolescence, particularly early adolescence. Tolman’s model will be used as a tool for achieving this goal but first a distinction must be made. By no means am I suggesting that an adolescent’s need for popularity should be considered a first-order drive. However, in accord with Tolman’s model of purposive behavior, I argue social behavior is purposeful. As discussed earlier, a goal-object or goal-situation refers to a demand, an innate or acquired urge for approaching or avoiding a physiological condition or environmental object. I propose an individual’s social behavior can be perceived as purposeful and enacted with the desired outcome of reaching a goal-object or goal-situation. For simplicity, this will be referred to as a goal-state. I suggest that even though goal-states are social in nature the patterns of behavior are similar to that of a goal-state brought on by hunger. Just as a rat driven by hunger is hypersensitive to relevant stimuli and willing to endure discomfort to reach food, I posit an individual driven to a goal-state, such as popularity, will also be hypersensitive to relevant stimuli and willing to endure discomfort to reach this desired goal-state. Taking such an approach, I propose a different rationale for explaining behavior indicative of the imaginary audience and personal fable.
Explaining the Imaginary Audience

Tolman suggested that organisms respond to stimuli differently depending on their goal-state. Tolman further posited that an organisms’ rate of learning would be related to the organisms’ demand for the outcome. Elkind and others posited that adolescents are hypersensitive to their peer environment. I agree. However, I argue this hypersensitivity is not an adolescent-specific process, but rather a universal pattern of behavior. The vast changes experienced by adolescents can cause the emergence of a desired goal-state, and this goal-state can lead to hypersensitivity towards relevant stimuli. To many adolescents, the most relevant stimuli may relate to peer relations but this is not due to any one change, such as formal operations. Further, unless it is believed that every adolescent has the same goal-state, adolescents should not be expected to be hypersensitive to the same stimuli.

Adolescents and others should be expected to respond to environmental stimuli differently depending on their goal-state and their need to reach that goal-state. Some adolescents, if not most, are hypersensitive to socio-personal environmental stimuli but I argue this hypersensitivity is not general in nature, but rather specific to the adolescent’s goal-state. Further, adolescents will vary in their level of satiation regarding a goal-state and this satiation level will dictate the level of hypersensitivity. For example, two adolescents may both have a goal-state related to popularity. One, however, may feel a sense of social satiation while the other may not. In this case, both would be somewhat sensitive to stimuli related to popularity. However, the adolescent who is not satiated by current popularity levels will be more sensitive to relevant stimuli.
Revisiting Elkind and Bowen’s imaginary audience reveals the implicit assumption that all adolescents are equally hypersensitive to all stimuli. The scale instructs respondents to think about how they would react to 12 different situations. Five of the items involve potentially embarrassing situations that occur in the school, five involve embarrassing situations at parties or social events, one is specific to being disliked and one is specific to being watched while working. Imagine an adolescent who is very confident regarding peer relations, has limited hypersensitivity, but lacks confidence regarding academics. This adolescent would respond such that imaginary audience scores for the classroom situation would be high but the imaginary audience scores for the social situations would be low. The scale is scored as if an adolescent should be equally hypersensitive to all situations. Not surprising many of the alpha coefficients fell under .60. The low internal consistency might also explain why the scale had such low correlation with other psychosocial instruments when initially tested by Elkind and Bowen (1979).

Research with adults supports the notion that different individuals will be hypersensitive to different stimuli based on their goal-states. For example, Stormark and Torkildsen (2004) compared cognitive processing of females with eating disorders to those without. These females, ages 17 to 43, were shown linguistic and pictorial representations of colors, food, and negative emotional and neutral stimuli. Each word was presented once in red, blue, green, and yellow. Similarly, ranges of different pictures were shown to the females, also against different color backgrounds. The participants were asked to type in the color of the words and the color of the picture background as
quickly as possible. It was predicted that the food pictures and words would be processed
differently than the non-food pictures and words; women with eating disorders would
place greater focus on the food. Therefore, due to an extreme focus on food stimuli,
females with eating disorders would be slower at typing in the colors than the women
who did not have eating disorders. This is precisely what the results revealed: females
with eating disorders were significantly slower at naming the color of the food words and
the negative emotional words than they were at naming the neutral words. Such
difference was not present in the control group. The researchers argue this is support for
the notion of attention bias—what I refer to as hypersensitivity to relevant stimuli—an
individual will focus more on self-relevant stimuli than non-relevant stimuli. Other
researchers found similar results when looking at attention biases of those with phobias
and those without (Kindt & Brosschot, 1997; Lavy & van den Hout, 1993). Researchers
have also found similar biased processing when studying individuals with obsessive-
compulsive disorder (Cohen, Lachenmeyer, & Springer, 2003). Gomez and Gomez
(2002) found anxious individuals ages 18 to 42 were significantly more likely to process
unpleasant words than pleasant ones. Researchers (MacLeod & Cohen, 1993; Richards &
French, 1992) have also found that anxious individuals judge all stimuli, whether
pleasant, unpleasant, or neutral, as more negative than non-anxious individuals. Further,
anxious individuals are also quicker at recognizing negative emotional cues (Eysenck &
Brtyrne, 1994).

Again, none of this research suggests Elkind’s observations were incorrect.
Elkind’s observations led him to believe that adolescents were hypersensitive to the
thoughts of their peers, which is evident in the items of the imaginary audience scale (Elkind & Bowen, 1979). Considering research suggesting the high importance placed on peers during adolescence, it is plausible that, among most adolescents, relationships with peers will predict their overall level of sensitivity to environmental stimuli. In other words, adolescents have many different goal-states but if peer goal-states are most prevalent, comfort with peers should be the overall predictor of environmental hypersensitivity. If this is so, it offers an explanation as to why Elkind’s observations led him to believe all adolescents were hypersensitive to peer opinion.

R1: Overall, is peer connectedness correlated with adolescents’ level of sensitivity to environmental stimuli?

Returning to Tolman’s model, as well as empirical research on adults, the following hypothesis is proposed:

H1: Individuals’ sensitivity to environmental stimuli is the result of 1) the salient goal-state and 2) the level of comfort associated with the goal-state.

Again, all individuals will not be hypersensitive to the same stimuli and not to the same extent. The individual’s goal-state will dictate what stimuli will be considered relevant and the individual’s level of satiation regarding the goal-state will dictate how sensitive the individual is to stimuli perceived as relevant.

In accord with H1, the following specific hypotheses are also put forth:

H1A: For those with a salient academic goal-state, levels of hypersensitivity to environmental stimuli will be related to level of comfort regarding academic achievement.
H1B: For those with a salient peer/companion goal-state, levels of hypersensitivity to environmental stimuli will be related to level of comfort regarding perceived peer social support.

H1C: For those with a salient parent/family goal-state, levels of hypersensitivity to environmental stimuli will be related to level of comfort regarding perceived parental social support.

While the former hypotheses address hypersensitivity, the next will specifically address learning. The next hypothesis is based on evidence presented by Tolman supporting the notion that hungry animals learn faster than non-hungry animals. Specifically, the next hypothesis seeks to test if the tenet, that organisms’ rate of learning will be determined by the demand for the outcome, is applicable to humans.

H2: Individuals learn more information when the information is related to a relevant outcome than when the information is not relevant.

Explaining Perceived Adolescent Invulnerability

Researchers have, albeit hesitantly, theorized that adolescents perceive themselves to be invulnerable. A new explanation for adolescent risk-taking, however, is very much warranted considering that research shows adolescents do not perceive themselves as any more invulnerable than do adults (Cohn et al., 1995; Milstead, 1993). Fortunately, research on animals suggests a plausible explanation. Tolman proposed that the stronger an animal’s drive, the greater willingness to endure discomfit to satiate the drive. Applied to human behavior, the greater the need for the desired goal-state, the greater the willingness to endure discomfort to reach the desired goal-state. This explanation is
different than explanations proposing adolescents take risks due to feelings of invulnerability. In accord, the following hypothesis is put forth:

\[ H3: \text{An individual’s willingness to endure discomfort will be related to the intensity of the need to reach the desired goal-state.} \]

**Disruption**

While, if supported, these hypotheses will offer an alternative explanation for aspects of adolescent behavior, a strong counterargument remains. If adolescent behavioral patterns are no different than those of adults, why do adolescents behave as they do? Tolman’s description of disruption may offer some answers.

Tolman described experiments where animals expected one outcome but had their cognitive expectations violated. This led to a state of disruption. Tolman presented disruption as an upset in behavior caused by a violation of expectations, leading the organism to focus on the cause of the disruption. Have the same patterns of behavior been found in humans? Since disruption is proposed to cause an upset in behavior, and behavior is a combination of environmental stimulus and initiating physiological states, then negative changes in individuals’ environments should lead to some form of physiological change. Past research supports this notion.

Theorell and Emlund (1993) asked adult participants on three different occasions to retrospectively report if they had experienced 1 of 10 events. Most of the events were negative: serious illness or death of a family member, divorce, or death of a child. A couple of positive events, such as the birth of a child, were also included. For each event, the respondent had to indicate the importance of the event. Subjects were then divided
into three groups: negative events, no events, or positive events. On each occasion, when participants completed the questionnaire, blood pressure was taken and blood was drawn so tests could be conducted. Results indicate that while no physiological changes were observed in the “no event” groups, changes happened in the groups reporting that both positive and negative events occurred. The triglyceride change in the negative events group was 20%, while the change was 11%, in the opposite direction for the positive events group. Further, for both the systolic and diastolic measures of blood pressure, the negative life group presented significantly different levels of blood pressure than the positive life events group. The findings indicate that disruption has a physiological impact on humans.

While the physiological response is one aspect of disruption, disruption should also negatively impact one’s psychological state. If Tolman’s findings are generalizable to humans, individuals experiencing negative life events should report a psychological response not unlike the monkey who did not receive the expected banana.

Disruption is not a common term in the literature. However, a large amount of research has focused on the impact of negative life events on one’s psychological state. Spangenber and Pieterse (1995) looked at the impact of undesirable life changes on South African women and found undesirable life changes to be negatively correlated with scores on a general health questionnaire. Williams and Deffenbacher (1983), focusing on Navy recruits, also found socio-personal changes to impact depression. Isometsa, Heikkinen, Henrikson, Aro, and Lonqvist (1995) looked at the impact of negative life
Can disruption help explain adolescent behavior? If, as argued by Inhelder and Piaget (1958), adolescence is a time of trial and error in an ever-changing environment, it seems likely that at least some of the changes experienced by adolescents should impact their psychological state. Empirical research supports this notion—negative life events have been found to have a similar impact on adolescents as on adults (Kessler & McLeod, 1984; Peterson, Sarigiani, & Kennedy, 1991). Xiaojia (1994) found that negative life changes impact depression during adolescence. Other researchers also found negative life changes to be negatively correlated with adolescent health status and personal adjustment (Gad & Johnson, 1980; Hetherington, Cox, & Cox, 1985; Kaltiala-Heino, Rimpela, Rantanen, & Laippala, 2001). Moreover, recent life experiences have been found to explain greater variance in depressive symptoms than did pubertal status (Brooks-Gunn, 1991; Brooks-Gunn et al., 1989; Brooks-Gunn & Warren, 1989).

Erikson and Tolman: Similarities in Observations

For any explanation of adolescent behavior to be accepted, it helps if the explanation is in accord with sentiments expressed by influential scholars. A discussion of Erikson’s interaction with an ex-medical soldier shows the notion of disruption to be in accord with Erikson’s explanation of ego identity. This interaction was actually the basis for the term ego identity, which later became synonymous with adolescence. The goal in presenting this aspect of Erikson’s work is to focus on his observation of what occurs when a human adult experiences a violation of expectations. Past research on negative
life events discussed the psychological and physiological impact of negative change. However, research on how this change impacts one’s perception and response to environmental stimuli is scant. Erikson’s work speaks to this issue. I will focus specifically on what Erikson observed when individuals’ expectations of their environment were violated in a negative manner and how these relate to Tolman’s assertions.

*The Impact of Expectancy Violations*

Explaining the origin of the term ego identity, Erikson discussed the events leading up to the creation and use of the term with a story about a young teacher, discharged from the military, who was experiencing incapacitating headaches. This ex-military soldier, who sought a medical position specifically to avoid the need for discharging a weapon, recalled the events believed to be responsible for the headaches:

A group of marines, just ashore, lay in the pitch darkness of a Pacific beachhead within close range of enemy fire. They once had been, and they still acted like, a group of tough boisterous men who are sure that they can ‘take anything.’ They had always felt that they could count on the ‘brass’ to relieve them after the initial assault and to let mere infantry do the holding of the positions taken. Somehow it had always contradicted the essential spirits of their corps to have ‘to take it lying down.’ Yet it had happened in this war. And when it happened, it had exposed them not only to damnable sniping from nowhere, but also to a strange mixture of disgust, rage, and fear—down in their stomachs. (1950, p. 38)
Other than having a sub-machine gun placed into his hands, the man did not remember many other specifics from that night. The next day the ex-medical soldier found himself in a hospital. His day was spent on sedatives, his evening consisted of hearing enemy air attacks. The ex-medical soldier was unable to move, and worse, as theorized by Erikson, unable to help as the individual watched able-bodied men and women finding shelter or helping those in need.

Erikson perceived the soldier’s incapacities to be caused by several incidents occurring at the same time: a reduction in group morale, a doubting of senior leadership, a steady stream of fire from unobservable enemies, and conflicting rationales for and against whether an offer to be sent home should be accepted. In one night, the ex-medical soldier learned his brothers-in-war may not be as cohesive a unit as previously thought, that he could not “take anything” as he had learned to believe, and that the trust he placed in his superiors was misplaced. These unexpected lessons caused a great disruption in his perception of how his world was supposed to work. As described by Erikson, the man “…had lost a sense of sameness and historical continuity” (1968, p. 17). Erikson originally referred to the man as losing his ego identity. The ex-soldier technically knew who he was but he longer perceived his life, his experiences, and his perceptions of the world as congruent. Over a decade later Erikson stated, “What I once called ego identity would in comparison be even closer to changing social reality…” (1968, p. 210).

Similarities to Tolman

Erikson’s description of what occurred to the soldier is not unlike what happened to the monkey who was expecting a banana. Both the monkey and the ex-medical soldier
had expectations concerning their surroundings. The ex-medical soldier believed his unit could handle anything and the leadership could be trusted, just as the monkey believed it would receive a banana. Both had their expectations violated and both suffered as a result. As discussed earlier, Tolman referred to disruption as a “breakdown and upset in behavior” caused by environmental change. Tolman also posited the change does not have to be based in reality, as shown by the rat experiencing disruption when the unusual odors were placed in the cage, even though the food was unchanged. The food still could have satiated the animal’s drive but the perception that something had changed caused disruption. The ex-medical soldier did not have any evidence that the leadership betrayed the troops, yet it was still part of what Erikson later referred to as a changing social reality.

It appears that regardless of the specifics of the change, disruption occurs as long as there is a negatively perceived change in one’s environment. Further, it appears this negative change can be based in reality or not, and it can be social or physical. The term socio-personal will is used to refer to the individuals’ perception of the social environment, and the ability to survive within it. It is the individual’s perception of the environment that matters. If an individual learns that the job perceived as secure actually never was, this can lead to a state of disruption. If the socio-personal environment has changed in such a way that the individual no longer feels as secure in their ability to survive, disruption is likely to occur. The individual’s job security did not change, just the person’s perception.
Disruption and Hypersensitivity to Stimuli

The day after the soldier's experience led to a negative violation of socio-personal expectations, the soldier was evacuated. At first the soldier felt much calmer but this sense of calm only lasted so long. During his first meal he heard the sound of metal silverware, which led him to hide under the table while others ate. As described by Erikson: “The metallic noise of the mess utensils went through his head like a salvo of shots” (p. 40). Severe headaches haunted the man long after, leading him to Erikson’s care.

Erikson reported that many other soldiers similarly experienced this constant state of panic. A sudden or loud noise would lead to feelings of endangerment. Further, anything too sudden or intense would lead the ex-soldiers to childlike anger and anxiety. Erikson (1950) theorized these men were victims of faulty processing:

What was sick in these men, then, was their screening system, that ability not to pay attention to a thousand stimuli which we perceive at any given moment but which we are able to ignore for the sake of whatever we are concentrating on. (p. 41)

These men could no longer trust the world as they were seeing it. They could not trust their ability to accurately process the reality of their environment. Erikson (1968) best explained this several years later:

What I once called ego identity would in comparison be even closer to changing social reality in that it would test, select, and integrate the self-images
derived from the psychosocial crisis of childhood in light of the ideological climate of youth. (p. 210)

**Similarities to Tolman**

While Tolman’s assertions are based primarily on animals and Erikson’s on adults, there are similarities. Tolman explained that rats and men, “...have hundreds, not to say thousands, of stimuli infringing on them every instant of their waking lives; and yet to by far the majority of these stimuli they do not, at the given moment, respond” (1932, p. 35). As just mentioned, Erikson (1950) states: “What was sick in these men, then, was their screening system, that ability not to pay attention to a thousand stimuli...” (p. 41).

Bringing the work of Tolman and Erikson into the adolescent realm, a different explanation of adolescent behavior emerges. I argue those in disruption will behave more like the “typical adolescent” than those not in a state of disruption. Further, those in a state of disruption will behave differently from those who just desire a certain outcome. In other words, the first three hypotheses test a rival explanation for behaviors indicative of the imaginary audience and the personal fable. This next set of hypotheses explores if the processes predicted to exist, via the first set of hypotheses, are amplified when an individual is in a state of disruption.

**H4:** *Individuals in a state of disruption will be more sensitive to their socio-personal environment than those not in a state of disruption.*
**H5:** Individuals in a state of disruption will report higher stress, lower self-esteem, higher anxiety, and lower stability of self than those not in a state of disruption.

Another adolescent behavior that possibly can be explained by research focused on adults is adolescents' lack of ability to differentiate between their thoughts and the thoughts of others. First, there is a common believe that young adolescents lack the ability to take into account the thoughts of others, which may be true. However, another possibility is the self-focused and anxious individual who may technically be able to consider other people's thoughts but is too focused to do so. Imagine an adult 30 minutes late for a vital meeting. This adult will likely not consider the thoughts of others while beeping the horn and cursing at any car not moving fast enough. This hypothetical situation provides a rival hypothesis to adolescent egocentrism as the cause of adolescents' lack of differentiation between others' thoughts and their own.

Greenberg et al. (1990) suggests that as people become more anxious, they become less tolerant of people with beliefs and values different from their own. If anxious individuals are less tolerant of others' viewpoints, it seems plausible they will spend less cognitive energy considering what others might think. Another possibility is that individuals are so focused on their thoughts that they could not imagine that others would not share their concerns. Before debating which of these two rival hypotheses are most useful, it is important to note that both of these explanations differ from Elkind's argument that adolescent egocentrism is the cause of this behavior. If the emergence of formal operations is responsible for adolescent egocentrism, whether the individual is in
disruption or not should not impact one’s ability to differentiate others’ thoughts from his or her own. If disruption is the cause, individuals in disruption should perceive others’ opinions to be more similar to their own when compared to those not in disruption.

*R2: Do individuals in a state of disruption perceive others’ opinions, regarding issues relevant to a disrupted goal-state, to be more similar to their own when compared to those not in disruption?*
CHAPTER III

METHODS

Participants

Cross-sectional survey data were collected from two different institutions of higher education: a southwestern university (SWU) and a northeastern college (NEC). College students were chosen as a sample to ensure if the hypotheses were supported the cause could not be attributed to processes or events specific to young adolescence. All participants from the SWU were taking the same course. Participants from the NEC were taking the same course but came from two different course sections meeting on different days. Students from the SWU and students from one of the two sections from the NEC were told they would receive extra credit for participation. The scores obtained from the NEC class receiving extra credit were not more reliable than scores obtained from the other NEC class.

In total, 265 surveys were distributed and returned. Fifty-one of the returned surveys were not used in data analysis for various reasons. Twelve surveys were returned incomplete and removed in totality. Further, as the purpose of the study was to specifically investigate older adolescents, only responses from 18 to 21 year old participants were included in the data analysis: 35 of the returned surveys were not included for this reason. After noticing some responses contained off-topic vulgarity, a research assistant and the author independently coded open-ended responses for hostility. Both coders were in complete agreement on four surveys considered to be hostile and these participants’ responses were removed in totality. Table 1 reports demographic
descriptors of the sample used for analysis and Table 2 reports demographic descriptors categorized by participant institution.

Procedures

At the start of three different class periods, the instructor informed the students they were going to be asked to participate in a research study. I introduced myself to the students and explained myself as a doctoral candidate interested in collecting information that will help me understand the life of college students. In accord with human subjects procedures, all students were told participation was voluntary and they could stop at any time. Students were told no negative repercussions would occur should they choose not to participate. It was also stated that all responses to the 25 to 35 minute survey would remain anonymous.

Surveys were distributed in 9 x 12 envelopes containing a human subjects consent form and two separately stapled surveys. Two different versions of the survey were used, labeled either 1A and 2A or 1B and 2B. The only difference between the two versions was the order in which the questions were asked. Students were asked not to open the envelopes until instructed to do so. Once all students had received envelopes they were instructed to remove only the human subjects form from the envelope (see Appendix A). After discussing the content of the human subjects consent form and giving potential participants a chance to review the form, all students agreed to take part in the survey. Students were then asked to remove the first of the two surveys (1A or 1B) from the envelope. Students were asked to fill out the first survey and to then spend a few minutes reading the proposal found at the end of the first survey packet. The proposal was for a
Table 1

Demographic Characteristics of All Participants (N = 214)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at time of survey (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>92</td>
<td>43.0%</td>
</tr>
<tr>
<td>19</td>
<td>77</td>
<td>36.0%</td>
</tr>
<tr>
<td>20</td>
<td>29</td>
<td>13.6%</td>
</tr>
<tr>
<td>21</td>
<td>16</td>
<td>7.5%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>133</td>
<td>62.1%</td>
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<tr>
<td>Male</td>
<td>81</td>
<td>37.9%</td>
</tr>
<tr>
<td>Ethnicity</td>
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<td></td>
</tr>
<tr>
<td>Asian</td>
<td>14</td>
<td>4.4%</td>
</tr>
<tr>
<td>Black/African American</td>
<td>26</td>
<td>6.1%</td>
</tr>
<tr>
<td>Hispanic or Latino/Latina</td>
<td>28</td>
<td>12.3%</td>
</tr>
<tr>
<td>White or Caucasian (non-Hispanic)</td>
<td>132</td>
<td>71.7%</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
<td>6.5%</td>
</tr>
</tbody>
</table>
Table 2

Demographic Characteristics of Participants from the SWU (n = 115) and NEC (n = 99)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>SWU n</th>
<th>SWU %</th>
<th>NEC n</th>
<th>NEC %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at time of survey (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>50</td>
<td>43.5%</td>
<td>42</td>
<td>42.5%</td>
</tr>
<tr>
<td>19</td>
<td>46</td>
<td>40.0%</td>
<td>31</td>
<td>31.3%</td>
</tr>
<tr>
<td>20</td>
<td>15</td>
<td>13.0%</td>
<td>14</td>
<td>14.1%</td>
</tr>
<tr>
<td>21</td>
<td>4</td>
<td>3.5%</td>
<td>12</td>
<td>12.1%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>80</td>
<td>69.6%</td>
<td>53</td>
<td>53.5%</td>
</tr>
<tr>
<td>Male</td>
<td>35</td>
<td>30.4%</td>
<td>46</td>
<td>46.5%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>5</td>
<td>4.3%</td>
<td>9</td>
<td>9.1%</td>
</tr>
<tr>
<td>Black/African American</td>
<td>7</td>
<td>6.1%</td>
<td>19</td>
<td>19.2%</td>
</tr>
<tr>
<td>Hispanic or Latino/Latina</td>
<td>14</td>
<td>12.2%</td>
<td>14</td>
<td>14.1%</td>
</tr>
<tr>
<td>White or Caucasian (non-Hispanic)</td>
<td>81</td>
<td>70.4%</td>
<td>51</td>
<td>51.5%</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>7.0%</td>
<td>6</td>
<td>6.1%</td>
</tr>
</tbody>
</table>
new set of books made specifically for the college student. The following instructions regarding the new book-set were then read:

Please take some time to carefully read about each volume. I will be asking some questions about the specific volumes later on. You will have approximately 6 minutes to go through the questions and read about the volumes. Please read through the list of books a few times.

Students were given approximately seven minutes to read the book-set and to complete the survey. The book-set is fictional and a flyer was created for the purpose of this study. Next, the first survey, 1A or 1B, and the human subject consent forms were collected. Once collection was complete, the students were instructed to begin the second survey, 2A or 2B. After the second survey was completed, collection occurred and students were thanked for their participation. Each survey had a unique identification number to allow the two different parts of the survey to be later matched without threatening the participants’ anonymity. To ensure anonymity, this unique identification number was not on the human subjects form. The entire process, from the start of class until the majority of surveys were completed, ranged from 40 to 50 minutes.

Students from both NEC classes, albeit one section more than the other, socialized excessively during the start of data collection. Students were therefore instructed to refrain from discussing the surveys with each other. The chatter slowly diminished and became minimal but not until the start of the second of the two surveys. Nonetheless, the data obtained from both NEC classes reliably represents the students’ responses.
Measures

Copies of both forms of the surveys can be found in Appendix B (1A and 2A) and Appendix C (1B and 2B).

Desired Goal-State

To assess the respondents’ goal-states the following open-ended question was put forth:

I’d like you to think about what you think would make your life perfect THIS YEAR! For example, ‘If only I could be popular and have everyone like me, then my life would be perfect.’ ‘If only I could be the best student in the school, then my life would be perfect.’ ‘If only I could be more athletic, then my life would be perfect.’ ‘If only I could be rich, then my life would be perfect’. Please tell me what you think would make your life perfect.

Participants were also asked, “Why do you think this will make your life perfect?” This question was included to clarify any desired goal-states that were unclear from the response to the first question. This instrument will sometimes be referred to as the perfect world scenario.

Need to Reach a Desired Goal-State

Participants’ need to reach their desired goal-state was measured via a five-item scale created for this study. These items focus on how important it is for the participants to reach their “perfect world.” Sample items include: 1) “How much do you need to reach your perfect world?” 2) “How much is your future happiness dependent on you reaching your perfect world?” and 3) “How much time do you spend thinking about what it will be
like to reach your perfect world?” This measure, the *Need for Desired Goal-state Scale*, produced scores of acceptable internal consistency for this college-student sample ($\alpha = .88$).

*Willingness to Risk Physical Pain*

Participants’ willingness to risk physical pain in order to reach their desired goal-state was measured by a new instrument created for this study. This measure asked participants to imagine that a pill existed that could give them their perfect world. Participants were also asked to imagine that the magic pill was not perfect and could sometimes cause extreme amounts of physical pain. A list of questions was then provided. Respondents were first asked to respond “yes” or “no” to the following question: “If there is a 100% chance you will get the remaining aspects of your perfect world, and a 0% chance the pill will cause extreme physical pain, will you take it?” The next question asked: “If there is a 90% chance you will get the remaining aspects of your perfect world, and a 10% chance the pill will cause extreme physical pain, will you take it?” The questions continued until the final question: “If there is a 10% chance you will get the remaining aspects of your perfect world, and a 90% chance the pill will cause extreme physical pain, will you take it?”

Responses to this list of questions were computed such that “yes” is worth one point and “no” is worth zero points. Someone who was only willing to take the pill if there was no chance of physical pain received a score of zero. Someone who was willing to take the pill if there was a 10% chance of physical pain received a score of one. Someone who was willing to take the pill if there was a 20% chance of physical pain
received a score of two. The higher one’s score the greater the respondent’s willingness to endure physical pain to reach the desired goal-state. The number of participants willing to take the pill depending on different levels of risk is reported in Table 3. This instrument will be referred to as the *Willingness to Risk Physical Pain Measure.*

**Sensitivity to Socio-Personal Stimuli**

A new instrument was created to measure socio-personal sensitivity. Originally, a five-item measure was created and pilot tested with middle school students. The five items are as follows: 1) “I wonder why people treat me the way they do,” 2) “I wonder what people are thinking about me,” 3) “I wonder what I can do to get people to like me more,” 4) “I worry about other people talking about me,” and 5) “I imagine what other people are saying about me.”

The response format includes the following choices: 1) never, 2) almost never, 3) unsure, 4) almost always, and 5) always. The responses to the pilot test of this measure revealed an internal consistency of .80. Responses to this scale were correlated with Rosenberg’s Self-Esteem Scale ($r = -.51$) and Rosenberg’s Stability of Self Scale ($r = -.31$). This indicates the lower one’s self-esteem and stability of self, the more sensitive the individual will be to his/her socio-personal environment. Such results are in accord with the proposed construct. While the internal consistency is acceptable, as is the convergent validity, four additional items were added for administration of the scale to college students. A factor analysis of responses obtained from this current college-student sample revealed three of the four new items did not load with the five original items: 1) I
Table 3

Frequency of Participants Willing to Accept Different Levels of Risk of Extreme Physical Pain, to Reach Their Perfect World

<table>
<thead>
<tr>
<th>Chance of Perfect World/Risk of Extreme Physical Pain</th>
<th>SWU&lt;sup&gt;a&lt;/sup&gt; (n = 115)</th>
<th>NEC&lt;sup&gt;a&lt;/sup&gt; (n = 98)&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Total&lt;sup&gt;a&lt;/sup&gt; (N = 213)&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%/0%&lt;sup&gt;c&lt;/sup&gt;</td>
<td>96(83.5%)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>82(83.7%)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>178(83.6%)&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>90%/10%</td>
<td>72(62.6%)</td>
<td>73(74.5%)</td>
<td>145(68.1%)</td>
</tr>
<tr>
<td>80%/20%</td>
<td>57(49.6%)</td>
<td>59(60.2%)</td>
<td>116(54.5%)</td>
</tr>
<tr>
<td>70%/30%</td>
<td>41(35.7%)</td>
<td>49(50.0%)</td>
<td>90(42.1%)</td>
</tr>
<tr>
<td>60%/40%</td>
<td>31(27.0%)</td>
<td>33(33.7%)</td>
<td>64(29.9%)</td>
</tr>
<tr>
<td>50%/50%</td>
<td>27(23.5%)</td>
<td>22(22.4%)</td>
<td>49(29.2%)</td>
</tr>
<tr>
<td>40%/60%</td>
<td>18(15.7%)</td>
<td>9(9.2%)</td>
<td>27(12.6%)</td>
</tr>
<tr>
<td>30%/70%</td>
<td>16(13.9%)</td>
<td>6(6.1%)</td>
<td>22(10.3%)</td>
</tr>
<tr>
<td>20%/80%</td>
<td>12(10.4%)</td>
<td>5(5.1%)</td>
<td>17(7.9%)</td>
</tr>
<tr>
<td>10%/90%</td>
<td>13(11.3%)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>4(4.1%)</td>
<td>17(7.9%)</td>
</tr>
</tbody>
</table>

<sup>a</sup> Means and standard deviation are as follows: SWU (M = 3.33, SD = 3.09), NEC (M = 3.53, SD = 2.54), Combined (M = 4.53, SD = 1.22).

<sup>b</sup> One participant did not fill out this page of the survey.

<sup>c</sup> The specific question read: If there is a 100% chance you will get the remaining aspects of your perfect world, and a 0% chance the pill will cause extreme physical pain, will you take it?

<sup>d</sup> Represents the quantity of individuals willing to take the pill at the listed risk level.

<sup>c</sup> One participant indicated a willingness to only take the pill at the 10%/90% level.
wonder how people will respond when they hear about my life, 2) I sometimes wonder how people would respond if something bad happens to me, and 3) I daydream what my future will hold. The item, “When I hear people talking I wonder what they are talking about,” loaded on the same factor as the original five items but reduced the internal consistency from $\alpha = .84$ to $\alpha = .83$; therefore, the final instrument consisted of the five original items. This five-item instrument, containing the original five-items, will be referred to as the *Socio-Personal Sensitivity Scale*.

**Learning**

To measure learning, respondents were given a description of a new book set created specifically for college students. Mentioned earlier, the book-set includes six different volumes, each on a different topic. The book flyer was on the final pages of the first survey. The introductory paragraph read as follows:

The following describes a new set of books made specifically for the college student. Please read each paragraph carefully. You will be asked about these different volumes later. Please think about the volume(s) of greatest and of least interest to you.

Each volume was described by a separate paragraph including the cost of the book, the number of pages, the number of individuals whose advice is included in the volume, the method with which the advice was obtained, the source of the advice, three topics covered in the volume, the edition of the volume, the incentives included with the volume, and the volume’s rating as determined by the fictional “College Book Club.”
As mentioned earlier, after participants had several minutes to read the book flyer, the flyer was collected. At the start of the second survey, respondents were asked to order the six volumes according to relevance. Table 4 reports the volumes perceived as most and least relevant for both samples. Next, respondents were asked to think about and answer recall questions concerning the volume they perceived as most and least relevant. The questions, seven open-ended and four multiple choice, focused specifically on the information provided via the flyer. Two items, one open-ended and one multiple-choice, had three parts. If respondents accurately recalled all information, a score of 15 would have been assigned. A higher score is indicative of greater learning. To reduce potential order-effects, half of the respondents received a survey asking participants to first answer questions concerning the most relevant volume, and the other half were first asked to think about the least relevant volume.

**Disrupted Goal-State**

To measure disrupted goal-states, respondents were asked to answer the following question:

Next, I’d like to ask you about any recent life events/changes you have experienced. Has anything negative, possibly unexpectedly, occurred that changed how you feel about yourself, your life, your relationships, or the world in general?

Participants were asked to describe one negative life change, event, or realization they believed was having the largest impact on their life and feelings. Similar to the perfect world scenario, participants were also asked, “How has this impacted your life, thoughts,
Table 4

<table>
<thead>
<tr>
<th>Volume</th>
<th>SWU (n = 107)</th>
<th>NEC (n = 84)</th>
<th>Total (N = 191)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Most Relevant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent/Family</td>
<td>4(3.7%)</td>
<td>7(8.3%)</td>
<td>11(5.8%)</td>
</tr>
<tr>
<td>Academic</td>
<td>47(43.9%)</td>
<td>15(17.9%)</td>
<td>62(32.5%)</td>
</tr>
<tr>
<td>Peer/Companionship</td>
<td>3(2.8%)</td>
<td>12(14.3%)</td>
<td>15(7.9%)</td>
</tr>
<tr>
<td>Finances</td>
<td>19(17.8%)</td>
<td>18(21.4%)</td>
<td>37(19.4%)</td>
</tr>
<tr>
<td>Career</td>
<td>24(22.9%)</td>
<td>16(19.0%)</td>
<td>40(20.9%)</td>
</tr>
<tr>
<td>Romantic Relationship</td>
<td>10(9.3%)</td>
<td>16(19.0%)</td>
<td>26(13.6%)</td>
</tr>
<tr>
<td>Least Relevant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent/Family</td>
<td>17(20.2%)</td>
<td>34(31.5%)</td>
<td>51(26.6%)</td>
</tr>
<tr>
<td>Academic</td>
<td>2(1.9%)</td>
<td>8(9.5%)</td>
<td>10(5.2%)</td>
</tr>
<tr>
<td>Peer/Companion</td>
<td>15(13.9%)</td>
<td>17(20.2%)</td>
<td>32(16.7%)</td>
</tr>
<tr>
<td>Finances</td>
<td>15(13.9%)</td>
<td>12(14.3%)</td>
<td>27(14.1%)</td>
</tr>
<tr>
<td>Career</td>
<td>8(7.4%)</td>
<td>10(11.9%)</td>
<td>18(9.4%)</td>
</tr>
<tr>
<td>Romantic Relationship</td>
<td>34(31.5%)</td>
<td>20(23.8%)</td>
<td>54(28.1%)</td>
</tr>
</tbody>
</table>

a Not all respondents responded to all items.

b One respondent from SWU responded to the volume of least relevance but not the volume of most relevance. The reported sample size represents the number of individuals responding to the volume of most relevance.
or how you feel about others?” This question was asked to clarify any disrupted goal-states that were unclear from the response to the first question. This was one of two instruments created to assist in categorizing whether or not participants should be considered to be in a state of disruption.

Intensity of Negative Event

The second instrument created to assist in categorizing whether or not participants were in a state of disruption measured the extent to which the participants are still bothered by the self-reported negative life events. This scale consisted of two items: 1) “How much do you worry/think about either this occurrence or the things that occurred as a result?” 2) “How much of an impact does this change, event, or realization currently have on you?” Participants were asked to respond to these two items on a seven-point scale anchored with not at all/a lot. The average of these two items will be referred to as the Negative Event Intensity Scale; responses to these two items were internally consistent (α = .85).

Perceived Social Support - Family & Peers

Respondent’s perception of the level of social support received from their families was measured with Procidano and Heller’s (1983) Perceived Social Support Scales. These two 20-item, scales are designed to measure, “the extent to which an individual perceives that his/her needs for support, information, and feedback are fulfilled by friends (PSS-Fr) and by family (PSS-Fa)” (p. 2). The PSS-Fa includes items such as, “My family gives me the moral support I need,” “I rely on my family members for emotional support,” and, “My family is sensitive to my personal needs.” The PSS-Fr includes
similar items, albeit for friends rather than family: "My friends give me the moral support I need," "I rely on my friends for emotional support," and "My friends are sensitive to my personal needs." Procidano and Heller’s initial tests of both of these instruments revealed responses, obtained from a college student sample, to have high test-retest reliability over a one-month time span ($r = .83$). The internal consistency of the responses was also found to be strong (PSS-Fr $\alpha = .88$, PSS-Fa $\alpha = .90$). Gloria and Kurpius (2001) also report responses to have high internal consistency (PSS-Fr $\alpha = .92$, PSS-Fa $\alpha = .89$). Responses to both subscales predict one’s level of disclosure with significant others (Procidano & Heller, 1983). The initial response format includes three possible responses: “Yes,” “No,” and “Don’t Know.” To increase variance, researchers (e.g., Rodriguez, Mira, Myers, Morris, & Cardoza, 2003) have used a four-point response format. The latter approach will be used in this current research. With the current sample, the PSS-Fr and the PSS-Fa produced scores of acceptable internal consistency ($\alpha = .92$, $\alpha = .94$), respectively.

**Stress**

Respondent stress level was assessed via the *Perceived Stress Scale* (PSS; Cohen, Kamarck, & Mermelstein, 1983). The PSS is a 14-item scale measuring how much individuals perceive their lives as stressful. Sample items include: "In the last month, how often have you felt nervous and ‘stressed’?" and "In the last month, how often have you found that you could not cope with all things that you had to do?" The scale’s response format includes: 1) never, 2) almost never, 3) sometimes, 4) fairly often, and 5) very often. College-student responses to the PSS had been found to be internally consistent ($\alpha = .85$) and to have a test-retest reliability of .85. Other studies using the PSS
reported similar internal consistency scores (Koopman et al., 2000; Williams, Hagerty, Yousha, Hoyle, & Oe, 2002). In this current study, responses from the college-student sample were internally consistent ($\alpha = .82$).

**Stability of Self**

Rosenberg's (1989) *Stability of Self-Scale* was used to assess participant's perceived stability of self. When using all five items, internal consistency had been found to be .69 (Alsaker & Olweus, 1986). However, dropping the fifth item increased the alpha coefficient to .80 and higher (Alsaker & Olweus, 1986). Researchers frequently have used only the first four items to measure stability of self (Alsaker, 1992; Kansi & Wichstrom, 2003; Nurmi, Berzonsky, Tammi, & Kinney, 1997; Wichstrom, 2000). In accord, a pilot investigation for this current research, albeit conducted with a middle school student sample, discovered the internal consistency of the responses increased from $\alpha = .72$ to $\alpha = .80$ when the fifth item was removed. The lack of internal consistency of the fifth item may be due to the item being the only one that has to be reverse scored. Stability of self has been found to correlate with global self-esteem ($r = .43$; Alsaker & Olweus, 1986) and depression ($r = .25$; Kansi, Wichstrom, & Bergman, 2003). With the current sample, dropping the fifth item increased internal consistency from $\alpha = .85$ to $\alpha = .88$; as such, only the first four items were used to compute the participants' scores on this measure.

**Self-Esteem**

Self-esteem was measured with the Rosenberg *Self-Esteem Scale* (Rosenberg, 1965, 1979). This 10-item, single-dimension scale, initially created to measure the self-
esteem of high school students, has been referred to as the most widely used measure of
global self-esteem (Whiteside-Mansell & Corwyn, 2003). Rosenberg himself has stated
similar results have been found whether the scale is used with the Guttman format or
Likert format (Rosenberg, 1979). The scale had a Guttman scale coefficient of
reproducibility of .92 (Fischer & Corncoran, 1994), and responses have been found to
have strong internal consistency (α = .82; Cheng & Furnham, 2003). Its two-week test-
retest reliability was reported as .85 and .88 (Fischer & Corncoran, 1994). Sample items
include, “On the whole I am satisfied with myself,” “I take a positive attitude toward
myself;” “I certainly feel useless at times,” and “At times I think I am no good at all.”
This current study used the Likert-type format. The response format reads as follows: 1)
Strongly Agree, 2) Agree, 3) Disagree, and 4) Strongly disagree. Positive statements are
reverse-coded so that lower scores reflected lower self-esteem. Low self-esteem, as
measured by this instrument, had been correlated with depression (r = -.66; Nurmi et al.,
1997), social anxiety (r = -.67; Alsaker & Olweus, 1986), and low stability of self (r =
.71; Nurmi et al., 1997). Responses to this instrument from this current sample were
internally consistent (α = .89).

Anxiety

Anxiety was measured via Beck’s Anxiety Inventory (BAI; Beck & Steer, 1990;
Steer & Beck, 1997). The BAI is a 21-item self-report instrument. Respondents are asked
to read a list of common anxiety symptoms and indicate how much they have been
bothered by each symptom over the past month. Sample symptoms include: inability to
relax, fear of worst happening, nervous, and scared. The response format contains four
items: 1) not at all, 2) mildly but it didn’t bother me, 3) moderately – it wasn’t pleasant at times, 4) severely – it bothered me a lot. Responses to the BAI are reported to have strong internal consistency ($\alpha = .90$; Gotlib et al., 2004). Further, Gotlib et al. found responses to the BAI to be correlated with responses to the Hamilton Depression Inventory ($r = .73$). With the current college-student sample, the BAI produced scores of acceptable internal consistency ($\alpha = .89$).

Academic Satiation

An Academic Satiation Scale was created for this current research effort. This 11-item measure was created to assess respondents’ satiation regarding their current level of academic performance. Regardless if respondents are receiving “As” or “Ds” this instrument assesses respondents’ happiness with the grades being received. Sample items include: “I thought I would be able to get better grades than I am currently getting,” “This semester is far easier than I thought it would be,” “I am unhappy with my academic performance thus far,” “I am happy with my current academic performance,” and “I worry about my grades.” Responses are indicated on a 4-item scale: strongly agree, agree, disagree, and strongly disagree. Responses from this current sample were internally consistent ($\alpha = .87$).

Romantic Satiation

A Romantic Satiation Scale was created for this current research effort. This measure, initially 5-items, was designed to measure the respondents’ level of satiation regarding their current romantic situation, regardless of their current romantic relationship. Sample items included: “I frequently wish I could find my soul mate,” “I
rarely think about finding a desirable romantic situation,” and “I am happy with my current romantic relationship situation.” Responses are indicated on a 4-item scale: 1) strongly agree, 2) agree, 3) disagree, and 4) strongly disagree. A factor analysis suggested all items loaded on the same component. However, two items, “I am happy with my current romantic relationship situation” and “I frequently think about how my romantic relationship(s) can be improved” had the lowest loadings and were therefore dropped. Dropping these two items increased the internal consistency of scores obtained via the romantic satiation scale for this sample from $\alpha = .72$ to $\alpha = .77$. As such, the final measure used in this study consisted of 3-items.

**Financial Satiation**

A *Financial Satiation Scale* was created for this current research effort. This 5-item measure, designed to measure the respondents’ level of financial satiation, is similar in content to the Romantic Satiation Scale. Sample items include: “I frequently wish my finances would improve,” “I rarely think about my finances,” and “I am happy with my current finances.” Like the Romantic Satiation Scale, responses are indicated on a four-item scale: strongly agree, agree, disagree, and strongly disagree. The measure produced scores of acceptable internal consistency ($\alpha = .88$).

**Differentiation Between One’s Thoughts and the Thoughts of Others**

Two different instruments were used to measure whether respondents perceived their thoughts and concerns to be the same as others. First, respondents were asked to rate, on a scale from 0 to 6 anchored with not at all/very much, the extent to which they worry about six different topics. The measure next asked respondents to rank the six
topics in order of how much they worry about each. The six topics are the same six topics on which the college volumes focus. The one volume ranked as being most worrisome by each individual respondent was used for analysis. The second step asked respondents to use a similar scale to rate how much they think other people worry about each of the six topics.

To determine scores for this construct, the absolute difference between how much each individual participant worried about the topic ranked most worrisome and how much the participant believed others worry about the same topic was computed. In other words, if a participant ranked finances as the topic worried about most, the “worry score” for finances on both questionnaires was used for analysis. The higher the score, the more the participant was able to separate his or her concerns from the concerns of others. The lower the score, the more the respondent believed others were equally worried about the topic he or she worries about most.

Half of respondents received the “how much do you worry” scale in the first survey packet and “how much do you think other people worry” scale in the second survey packet. The other half received the “how much do you think other people worry” scale in the first survey packet and the “how much do you worry” scale in the second survey packet. Since the first survey packet was collected before the second packet was read, participants were not able, unless responses were memorized, to base responses to one scale on their responses to the other.
Coding the Open-Ended Responses

Perfect World Scenario

After reading through the responses to the perfect world scenario, a coding guide was created (Appendix D). After a brief training session, two research assistants, along with myself, individually coded all responses. Coders were instructed a response could fall into more than one category. An exact agreement occurred when both coders agreed on all codes to be assigned to one participant’s response. Coder #1 and Coder #2 exhibited an 87.6% exact agreement rate. Partial agreement occurred when Coder #1 and Coder #2 agreed on one coding for a respondent’s answer but disagreed on a second or third code. Of the instances where there was not exact agreement, there was partial agreement 72.7% of the time. In these instances, only the agreed upon codes were considered valid for analysis. In total, there was exact or partial agreement between Coder #1 and Coder #2 for 95.7% of response. When there was not exact or partial agreement, Coder #3’s codes were compared with the two other coders. In all instances Coder #3 agreed, either partially or exactly, with either Coder #1 (58.3%) or Coder #2 (41.7%). Only codes agreed upon by at least two of the three coders were considered valid for analysis. Table 5 reports the frequencies of the different goal-states for the total sample.

Negative Life Event

The same coding guide for the Perfect World Scenario, was used to code responses to the negative life event. Coding procedures mimicked those of the perfect world scenario. Coders #1 and #2 were in exact agreement for 82.8% of responses; and,
Table 5

Frequency of Different Desired Goal-States as Indicated by the Participants' (N = 214)

<table>
<thead>
<tr>
<th>Desired Goal-State</th>
<th>Total&lt;sup&gt;b&lt;/sup&gt; (K = 296)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent/Family</td>
<td>29(13.6%)&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Academic</td>
<td>54(25.2%)</td>
</tr>
<tr>
<td>Peer/Companionship</td>
<td>19(8.9%)</td>
</tr>
<tr>
<td>Finances</td>
<td>70(32.7%)</td>
</tr>
<tr>
<td>Career</td>
<td>41(19.2%)</td>
</tr>
<tr>
<td>Romantic Relationship</td>
<td>53(24.8%)</td>
</tr>
<tr>
<td>Other</td>
<td>30(14.0%)</td>
</tr>
</tbody>
</table>

<sup>a</sup> A participant’s response could have been coded as indicating more than one goal-state.

<sup>b</sup> The K refers to the number of different goal-states put forth by the sample (K = 296).

<sup>c</sup> The percentage refers to the portion of participants (N = 214) indicating the specified goal-state.
there was partial agreement for 62.8% of the cases where exact agreement did not occur. In total, there was exact or partial agreement between Coder #1 and Coder #2 for 93.6% of responses. For the remaining 6.4% of cases, Coder #3's codes were used. Coder #3 agreed with Coder #1 or Coder #2 for all remaining cases. There was exact agreement in 87.5% of the cases and partial agreement for the remaining 12.5%. Table 6 reports frequencies of the different disrupted goal-states for each sample and the combined sample.

Learning

To limit potential bias, any questions with subjective scoring were scored with the same coding process mentioned above. Specifically, responses to the questions, “Who gave advice for the volume?” and “What are the three topics that the volume will cover?” required some interpretation and were therefore approached as such. The coders were instructed to compare the given answer with the actual answer as indicated in the book flyer. There was a 92.4% agreement rate when coding responses to the question, “Who gave advice for the volume?” The agreement rate for the item, “What three topics does the volume discuss?” was 79.2%. In both cases when exact agreement did not exist between Coder #1 and Coder #2, Coder #3’s codes were assessed. In 100% of the cases where Coder #1 and Coder #2 disagreed, one of the coders was in agreement with Coder #3. As mentioned earlier, if respondents accurately recalled all information, a score of 15 would have been assigned. Scores ranged from 0 to 12. The mean score on the volume of most interest was 3.04 ($SD = 3.02$). The mean score on the volume of least interest was 1.16 ($SD = 1.70$). When asked to recall information about the volume of least interest
Table 6

Frequency of Different Disrupted Goal-States as Indicated by the Participants’ (N = 197)

<table>
<thead>
<tr>
<th>Disrupted Goal-State</th>
<th>Total (^b) (K = 233)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent/Family</td>
<td>64(32.5%) (^c)</td>
</tr>
<tr>
<td>Academic</td>
<td>31(15.7%)</td>
</tr>
<tr>
<td>Peer/Companionship</td>
<td>36(18.3%)</td>
</tr>
<tr>
<td>Finances</td>
<td>16(8.1%)</td>
</tr>
<tr>
<td>Career</td>
<td>12(6.1%)</td>
</tr>
<tr>
<td>Romantic Relationship</td>
<td>38(19.3%)</td>
</tr>
<tr>
<td>Other</td>
<td>34(17.3%)</td>
</tr>
</tbody>
</table>

\(^a\) A participant’s response could have been coded as indicating more than one goal-state.

\(^b\) The K refers to the number of different goal-states that were put forth by the sample (K = 233).

\(^c\) The percentage refers to the portion of participants indicating the specified goal-state (N = 197).
50.2% scored a zero, 29.0% scored a zero when asked to recall information about the volume of most interest.

Categorizing Respondents as Being in a State of Disruption

Respondents were categorized as being in a state of disruption only if they met two criteria. First, respondents' disrupted goal-state, as measured via the negative life event question, had to be categorized in the same domain as the respondents' desired goal-state, as measured by the perfect world scenario. In total, 62 respondents (29.0%) reported a disrupted goal-state in accord with their desired goal-state.

The second criteria required participants to have reported a score greater than four on both the Need for Desired Goal-state Scale and the Negative Event Intensity Scale. Forty respondents (18.7%) met both criteria and were categorized as being in a state of disruption. Table 7 reports the demographic variables of those determined to be in a state of disruption and those determined not to be in a state of disruption.
Table 7

Demographic Characteristics of Disrupted and Non-Disrupted Participants

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Disrupted (n = 40)</th>
<th>Non-Disrupted (n = 157)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWU</td>
<td>30</td>
<td>26.1%</td>
</tr>
<tr>
<td>NEC</td>
<td>10</td>
<td>10.1%</td>
</tr>
<tr>
<td>Age at time of survey (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>18</td>
<td>19.6%</td>
</tr>
<tr>
<td>19</td>
<td>17</td>
<td>22.1%</td>
</tr>
<tr>
<td>20</td>
<td>4</td>
<td>13.8%</td>
</tr>
<tr>
<td>21</td>
<td>1</td>
<td>6.3%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>34</td>
<td>25.6%</td>
</tr>
<tr>
<td>Male</td>
<td>6</td>
<td>7.4%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>1</td>
<td>7.1%</td>
</tr>
<tr>
<td>Black/African American</td>
<td>6</td>
<td>23.1%</td>
</tr>
<tr>
<td>Hispanic or Latino/Latina</td>
<td>5</td>
<td>17.9%</td>
</tr>
<tr>
<td>White or Caucasian (non-Hispanic)</td>
<td>25</td>
<td>18.9%</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>21.4%</td>
</tr>
</tbody>
</table>

*Seventeen respondents did not respond to the negative life event question and therefore were not included in this analysis.*
CHAPTER IV
RESULTS AND DISCUSSION

Group differences, means, and standard deviations are reported in Table 8. The correlation coefficients obtained by all scales are reported in Table 9.

Research Question 1

The first research question asked if respondents’ levels of perceived peer social support were correlated with socio-personal sensitivity. This was asked as a possible explanation as to why Elkind associated adolescent hypersensitivity with peer relations. As reported in Table 9, when the entire sample was analyzed as a whole, a significant two-tailed correlation was revealed \((r = -.18, p < .05)\). The lower one’s level of perceived peer social support, the greater the level of one’s socio-personal sensitivity. When the sample was divided by location, a significant correlation, two-tailed, was revealed for respondents from the NEC \((r = -.26, p < .05)\), but not the SWU \((r = -.11, p = .24)\).

Also reported in Table 9, several other variables were also significantly correlated with socio-personal sensitivity. Specifically, PSS-Family \((r = -.17)\), perceived stress \((r = .39)\), stability of self \((r = -.38)\), self-esteem \((r = -.43)\), anxiety \((r = .28)\), academic satiation \((r = -.17)\), and romantic satiation \((r = -.22)\) were all significantly correlated with responses obtained via the Socio-Personal Sensitivity Scale. The significant relationship between self-esteem and socio-personal sensitivity is similar to Simmons, Rosenberg, and Rosenberg’s (1973) finding that adolescents with low self-esteem report greater self-
### Table 8

<table>
<thead>
<tr>
<th>Instrument (min – max)</th>
<th>SWU</th>
<th>NEC</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Need for Desired Goal State Scale (0 – 6)</td>
<td>4.57(1.19)</td>
<td>4.49(1.26)</td>
<td>4.53(1.22)</td>
</tr>
<tr>
<td>2. Willingness to Risk Physical Pain Measure (0 – 10)</td>
<td>3.33(3.09)</td>
<td>3.53(2.54)</td>
<td>3.42(2.85)</td>
</tr>
<tr>
<td>3. Socio-Personal Sensitivity Scale (1 – 5)</td>
<td>2.86(0.76)</td>
<td>2.76(0.87)</td>
<td>2.81(0.81)</td>
</tr>
<tr>
<td>4. PSS-Family (1 – 4)</td>
<td>3.18(0.55)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.87(0.57)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3.04(0.58)</td>
</tr>
<tr>
<td>5. PSS-Peers (1 – 4)</td>
<td>3.14(0.48)</td>
<td>3.06(0.44)</td>
<td>3.11(0.58)</td>
</tr>
<tr>
<td>6. Perceived Stress Scale (0 – 4)</td>
<td>2.00(0.56)</td>
<td>1.96(0.48)</td>
<td>1.98(0.53)</td>
</tr>
<tr>
<td>7. Stability of Self-Scale (1 – 4)</td>
<td>2.52(0.71)</td>
<td>2.54(0.74)</td>
<td>2.49(0.68)</td>
</tr>
<tr>
<td>8. Self-Esteem Scale (1 – 4)</td>
<td>3.08(0.49)</td>
<td>3.02(0.56)</td>
<td>3.05(0.52)</td>
</tr>
<tr>
<td>9. Beck’s Anxiety Inventory (0 – 3)</td>
<td>0.71(0.48)</td>
<td>0.66(0.47)</td>
<td>0.69(0.47)</td>
</tr>
<tr>
<td>10. Academic Satiation Scale (1 – 4)</td>
<td>2.28(0.56)&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.46(0.48)&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.37(0.53)</td>
</tr>
<tr>
<td>11. Romantic Satiation Scale (1 – 4)</td>
<td>2.11(0.67)</td>
<td>2.14(0.75)</td>
<td>2.13(0.71)</td>
</tr>
<tr>
<td>12. Financial Satiation Scale (1 – 4)</td>
<td>2.23(0.68)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1.89(0.65)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2.07(0.69)</td>
</tr>
<tr>
<td>13. Negative Event Intensity Scale (0 – 6)</td>
<td>4.57(1.19)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>3.53(2.54)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>4.54(1.22)</td>
</tr>
</tbody>
</table>

<sup>a</sup> t = 3.98, df = 210, p < .05,  
<sup>b</sup> t = 2.55, df = 210, p < .05,  
<sup>c</sup> t = 3.76, df = 212, p < .05,  
<sup>d</sup> t = 2.12, df = 196, p < .05.
Table 9
Correlations of Participant Response Scores (N = 214)

<table>
<thead>
<tr>
<th>Measure*</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<td>-.24</td>
<td>-.13</td>
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</table>

Note. Bold indicates the correlation coefficient is significant, p < .05, two-tailed.

*a = Need for Desired Goal State Scale; 2 = Willingness to Risk Physical Pain Measure; 
3 = Socio-Personal Sensitivity Scale; 4 = PSS-Family; 5 = PSS-Friend; 6 = Perceived Stress Scale; 7 = Stability of Self-Scale; 8 = Self-Esteem Scale; 9 = Beck’s Anxiety Inventory; 10 = Academic Satiation Scale; 11 = Romantic Satiation Scale; 12 = Financial Satiation Scale; 13 = Negative Event Intensity Scale.
consciousness than adolescents with high self-esteem. The significant relationship between PSS-Family and socio-personal sensitivity is in accord with Lapsley et al. (1989) and Vartanian’s (1997) findings that suggested heightened imaginary audience scores are related to a lack of interpersonal connectedness between adolescents and their parents.

Together the results support my earlier suggestion that individuals’ sensitivity to their socio-personal environment will be determined by a number of factors. The number of factors that can impact socio-personal sensitivity may explain why past attempts to measure socio-personal sensitivity, frequently referred to as the imaginary audience, have been so troublesome. Elkind and Bowen’s instrument focuses on how a respondent would react when placed in an embarrassing situation. However, the audiences for the different situations are primarily peers. Individuals hypersensitive to opinions and thoughts of people besides their peers may have scored low on Elkind and Bowen’s measure but indeed been extremely sensitive to their socio-personal environment.

Hypothesis 1

The first hypothesis predicted respondents’ levels of socio-personal sensitivity would be associated with 1) the goal-state most salient to the respondent and, 2) the level of satiation associated with the most salient goal-state. The intention was to test this hypothesis with at least two groups: one group with an interpersonal goal-state and one group with a non-interpersonal goal-state. The initial hypothesis assumed the three most popular goal-states would be academic, family, and peer. Frequencies reported in Table 5 indicate this was an incorrect assumption. Fortunately, 53 respondents were coded as having a romantic relationship goal-state. Therefore, these participants were used for the
interpersonal goal-state analysis. While enough respondents indicated an academic goal-state for the planned analysis to be completed, a greater number of respondents indicated a financial goal-state. Therefore, those with a financial goal-state were used for the second, non-interpersonal goal-state, analysis.

The sample for the first analysis only included individuals whose response to the perfect world scenario was coded as indicating a romantic goal-state. A demographic breakdown of this sample can be found in Table 10. It was hypothesized that individuals with a romantic goal-state would be more or less sensitive to their socio-personal environment depending on their level of romantic satiation.

A hierarchical multiple regression was conducted using socio-personal sensitivity as the dependent measure. The first step involved entering variables not expected to predict socio-personal sensitivity for those with a romantic goal-state: financial satiation, PSS-Peer, academic satiation, stability of self, PSS-Family, anxiety, perceived stress, and self-esteem. The second step involved entering all the same variables, plus the respondents’ levels of romantic satiation.

As presented in Table 11, both the first and the second model significantly predicted socio-personal sensitivity. The only significant predictor in the first model was stability of self. In the second model both stability of self and romantic satiation were significant predictors of socio-personal sensitivity. The addition of romantic satiation led to a significant $R^2$ change. The $R^2$ and adjusted $R^2$ are also provided in Table 11. Specifically, while the model without romantic satiation predicted 23% of the variance in
Table 10

Demographic Characteristics of Participants with a Romantic Goal-State (N = 53)

<table>
<thead>
<tr>
<th>Characteristic</th>
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<th>%</th>
</tr>
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<tr>
<td>Institution</td>
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<tr>
<td>SWU</td>
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</tr>
<tr>
<td>NEC</td>
<td>27</td>
<td>50.9%</td>
</tr>
<tr>
<td>Age at time of survey (years)</td>
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</tr>
<tr>
<td>18</td>
<td>21</td>
<td>39.6%</td>
</tr>
<tr>
<td>19</td>
<td>23</td>
<td>43.4%</td>
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<tr>
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<td>3</td>
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<tr>
<td>21</td>
<td>6</td>
<td>11.3%</td>
</tr>
<tr>
<td>Gender</td>
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</tr>
<tr>
<td>Female</td>
<td>33</td>
<td>62.3%</td>
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<tr>
<td>Male</td>
<td>20</td>
<td>37.7%</td>
</tr>
<tr>
<td>Ethnicity</td>
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</tr>
<tr>
<td>Asian</td>
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<td>9.4%</td>
</tr>
<tr>
<td>Black/African American</td>
<td>3</td>
<td>5.7%</td>
</tr>
<tr>
<td>Hispanic or Latino/Latina</td>
<td>4</td>
<td>7.5%</td>
</tr>
<tr>
<td>White or Caucasian (non-Hispanic)</td>
<td>37</td>
<td>69.8%</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>7.5%</td>
</tr>
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</table>
Table 11

Summary of Hierarchical Regression Analysis for Variables Predicting Socio-Personal Sensitivity Among Those with a Romantic Goal-State (N = 53)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SE_B$</th>
<th>$\beta$</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
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<td><strong>Step 1</strong></td>
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<td></td>
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</tr>
<tr>
<td>Financial Satiation</td>
<td>.07</td>
<td>.14</td>
<td>.07</td>
<td>.35*</td>
<td>.23*</td>
</tr>
<tr>
<td>PSS-Peer</td>
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<td>.01</td>
<td>-.11</td>
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</tr>
<tr>
<td>Academic Satiation</td>
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<td>.26</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stability of Self</td>
<td>-.41</td>
<td>.20</td>
<td>-.35*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSS-Family</td>
<td>-.03</td>
<td>.19</td>
<td>-.02</td>
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<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>.20</td>
<td>.31</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>-.22</td>
<td>.32</td>
<td>-.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>-.42</td>
<td>.34</td>
<td>-.26</td>
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<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Satiation</td>
<td>.09</td>
<td>.13</td>
<td>.08</td>
<td>.43*</td>
<td>.31*</td>
</tr>
<tr>
<td>PSS-Peer</td>
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<td>.01</td>
<td>-.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Satiation</td>
<td>.10</td>
<td>.25</td>
<td>.06</td>
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<tr>
<td>Stability of Self</td>
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<td>-.36*</td>
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<tr>
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<tr>
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<tr>
<td>Perceived Stress</td>
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<td>.33</td>
<td>-.16</td>
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<tr>
<td>Romantic Satiation</td>
<td>-.49</td>
<td>.20</td>
<td>-.32*</td>
<td></td>
<td></td>
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</tbody>
</table>

*p < .05.
socio-personal sensitivity, romantic satiation accounted for an additional 8% of the variance. Table 12 reports the correlations of the predictor variables.

This finding indicates that among individuals with a romantic goal-state, sensitivity to the socio-personal environment will not be predicted by PSS-Peer, PSS-Family, perceived stress, anxiety, self-esteem, academic satiation, or financial satiation, but rather, stability of self and how satiated one is regarding romantic relations. As presented earlier, when the sample is looked at in its entirety, many variables correlate with socio-personal sensitivity. However, when individuals with a similar goal-state were examined, only self-esteem stability and romantic satiation were revealed as significant predictors.

Next, a second hierarchical multiple regression was conducted. For this analysis the sample only included those with a financial goal-state (n = 70). The dependent measure was again socio-personal sensitivity. A demographic breakdown of this sample can be found in Table 13. The first step of this analysis involved entering the variables not expected to predict socio-personal sensitivity into the model: romantic satiation, perceived stress, PSS-Family, PSS-Peer, academic satiation, anxiety, self-esteem, and stability of self. Next, the respondents’ level of financial satiation was entered along with all the aforementioned variables.

As presented in Table 14, both the first and the second model significantly predicted socio-personal sensitivity. However, no individual variable, including financial satiation, individually accounted for a significant portion of the variance. Table 15 reports the correlations of the dependent variable and all predictor variables.
Table 12

Correlations of All Predictor Variables for Only Those Participants (N = 53) with a Romantic Goal-State

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>6</th>
<th>7</th>
<th>8</th>
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</thead>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
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<td>1.00</td>
<td>.12</td>
<td>.13</td>
<td>.13</td>
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<td>.17</td>
<td>.05</td>
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</tr>
<tr>
<td>2. PSS-Peer</td>
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<td>1.00</td>
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<tr>
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<td>.21</td>
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<td>-.14</td>
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<td>-.47</td>
<td>-.26</td>
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<td>.26</td>
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<td>-.31</td>
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<td>.23</td>
<td>1.00</td>
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<tr>
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<td>.04</td>
<td>.34</td>
<td>.00</td>
<td>.13</td>
<td>-.22</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Table 13

Demographic Characteristics of Participants (N = 70) with a Financial Goal-State

<table>
<thead>
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<th>Characteristic</th>
<th>n</th>
<th>%</th>
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<tr>
<td>Institution</td>
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<td></td>
</tr>
<tr>
<td>SWU</td>
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</tr>
<tr>
<td>NEC</td>
<td>42</td>
<td>60.0%</td>
</tr>
<tr>
<td>Age at time of survey (years)</td>
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<td></td>
</tr>
<tr>
<td>18</td>
<td>21</td>
<td>39.6%</td>
</tr>
<tr>
<td>19</td>
<td>23</td>
<td>43.4%</td>
</tr>
<tr>
<td>20</td>
<td>3</td>
<td>5.7%</td>
</tr>
<tr>
<td>21</td>
<td>6</td>
<td>11.3%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>39</td>
<td>55.7%</td>
</tr>
<tr>
<td>Male</td>
<td>31</td>
<td>44.3%</td>
</tr>
<tr>
<td>Ethnicity</td>
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<tr>
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<td>5</td>
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<tr>
<td>Black/African American</td>
<td>16</td>
<td>22.9%</td>
</tr>
<tr>
<td>Hispanic or Latino/Latina</td>
<td>10</td>
<td>14.3%</td>
</tr>
<tr>
<td>White or Caucasian (non-Hispanic)</td>
<td>35</td>
<td>50.0%</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>5.7%</td>
</tr>
</tbody>
</table>
Table 14

Summary of Hierarchical Regression Analysis for Variables Predicting Socio-Personal Sensitivity Among Those with a Financial Goal-State (N = 70)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>(R^2)</th>
<th>Adjusted (R^2)</th>
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</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Romantic Satiation</td>
<td>-.23</td>
<td>.14</td>
<td>-.20</td>
<td>.25*</td>
<td>.14*</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>.44</td>
<td>.32</td>
<td>.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSS-Family</td>
<td>.22</td>
<td>.20</td>
<td>.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSS-Peer</td>
<td>-.00</td>
<td>.01</td>
<td>-.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Satiation</td>
<td>-.07</td>
<td>.23</td>
<td>-.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>.29</td>
<td>.30</td>
<td>.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>-.41</td>
<td>.28</td>
<td>-.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stability of Self</td>
<td>.25</td>
<td>.21</td>
<td>.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Romantic Satiation</td>
<td>-.23</td>
<td>.14</td>
<td>-.20</td>
<td>.25*</td>
<td>.13*</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>.48</td>
<td>.35</td>
<td>.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSS-Family</td>
<td>.21</td>
<td>.20</td>
<td>.15</td>
<td></td>
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<tr>
<td>PSS-Peer</td>
<td>-.00</td>
<td>.01</td>
<td>-.04</td>
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<tr>
<td>Academic Satiation</td>
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<td>.23</td>
<td>-.04</td>
<td></td>
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</tr>
<tr>
<td>Anxiety</td>
<td>.27</td>
<td>.30</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>-.39</td>
<td>.28</td>
<td>-.25</td>
<td></td>
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</tr>
<tr>
<td>Stability of Self</td>
<td>.25</td>
<td>.22</td>
<td>.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Satiation</td>
<td>.07</td>
<td>.21</td>
<td>.05</td>
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</tr>
</tbody>
</table>

*\(p < .05\).
Table 15

Correlations of All Predictor Variables for Only Those Participants (N = 70) with a Financial Goal-State

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Romantic Sat.</td>
<td>1.00</td>
<td>.02</td>
<td>.20</td>
<td>.20</td>
<td>.14</td>
<td>.01</td>
<td>-.10</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td>2. Perceived Stress</td>
<td>.02</td>
<td>1.00</td>
<td>-.05</td>
<td>-.05</td>
<td>.25</td>
<td>-.50</td>
<td>.28</td>
<td>.48</td>
<td></td>
</tr>
<tr>
<td>3. PSS-Family</td>
<td>.20</td>
<td>-.05</td>
<td>1.00</td>
<td>-.08</td>
<td>.21</td>
<td>.23</td>
<td>-.30</td>
<td>-.06</td>
<td></td>
</tr>
<tr>
<td>4. PSS-Peer</td>
<td>.20</td>
<td>-.05</td>
<td>-.08</td>
<td>1.00</td>
<td>-.12</td>
<td>.14</td>
<td>-.27</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>5. Academic Sat.</td>
<td>.14</td>
<td>.25</td>
<td>.21</td>
<td>-.12</td>
<td>1.00</td>
<td>.12</td>
<td>-.13</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>6. Anxiety</td>
<td>.01</td>
<td>-.50</td>
<td>.23</td>
<td>.14</td>
<td>.12</td>
<td>1.00</td>
<td>-.20</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>7. Self-Esteem</td>
<td>-.10</td>
<td>.28</td>
<td>-.30</td>
<td>-.27</td>
<td>-.13</td>
<td>-.20</td>
<td>1.00</td>
<td>-.28</td>
<td></td>
</tr>
<tr>
<td>8. Stability of Self</td>
<td>-.07</td>
<td>.48</td>
<td>-.06</td>
<td>.04</td>
<td>.04</td>
<td>-.10</td>
<td>-.28</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Romantic Sat.</td>
<td>1.00</td>
<td>.01</td>
<td>.20</td>
<td>.20</td>
<td>.14</td>
<td>.02</td>
<td>-.10</td>
<td>-.07</td>
<td>-.03</td>
</tr>
<tr>
<td>2. Perceived Stress</td>
<td>.01</td>
<td>1.00</td>
<td>-.12</td>
<td>-.05</td>
<td>.27</td>
<td>-.51</td>
<td>.32</td>
<td>.48</td>
<td>.39</td>
</tr>
<tr>
<td>3. PSS-Family</td>
<td>.20</td>
<td>-.12</td>
<td>1.00</td>
<td>-.08</td>
<td>.19</td>
<td>.25</td>
<td>-.33</td>
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<td>-.18</td>
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<tr>
<td>4. PSS-Peer</td>
<td>.20</td>
<td>-.05</td>
<td>-.08</td>
<td>1.00</td>
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<td>.14</td>
<td>-.27</td>
<td>.04</td>
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<tr>
<td>5. Academic Sat.</td>
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<td>.11</td>
<td>-.11</td>
<td>.05</td>
<td>.09</td>
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<tr>
<td>6. Anxiety</td>
<td>.02</td>
<td>-.51</td>
<td>.25</td>
<td>.14</td>
<td>.11</td>
<td>1.00</td>
<td>-.22</td>
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<td>-.14</td>
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<td>7. Self-Esteem</td>
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<td>.32</td>
<td>-.33</td>
<td>-.27</td>
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<td>-.22</td>
<td>1.00</td>
<td>.25</td>
<td>.19</td>
</tr>
<tr>
<td>8. Stability of Self</td>
<td>-.07</td>
<td>.48</td>
<td>-.08</td>
<td>.04</td>
<td>.05</td>
<td>-.11</td>
<td>-.25</td>
<td>1.00</td>
<td>.10</td>
</tr>
<tr>
<td>9. Financial Sat.</td>
<td>-.03</td>
<td>.39</td>
<td>-.18</td>
<td>-.00</td>
<td>.09</td>
<td>-.14</td>
<td>.19</td>
<td>.10</td>
<td>1.00</td>
</tr>
</tbody>
</table>
This indicates among those with a financial goal-state, socio-personal sensitivity cannot be predicted by respondents' level of satiation with their most salient goal-state. In retrospect this finding is not surprising as the Socio-Personal Sensitivity Scale focuses on social aspects of hypersensitivity. The expectation that satiation would predict socio-personal sensitivity even among non-interpersonal goal-states was derived from the pilot study. In the pilot study academic satiation, a non-interpersonal goal-state, significantly predicted socio-personal sensitivity among those with an academic goal-state. However, the satiation measure did not focus on grades, but rather the relationship between the middle school students and their teacher. It was assumed that the relationship between college students and their teachers would not play as much of a role in academic satiation level and therefore a new academic satiation measure was created.

The combination of the two analyses lends partial support to the tenet of Tolman’s model of purposive behavior that states: organisms respond differently to stimuli, and notice different stimuli. Participants responded differently to stimuli and noticed different stimuli, depending on their goal-state. Those with a romantic goal-state were sensitive to socio-personal stimuli depending on their level of romantic satiation; however, those with a financial goal-state were not more or less sensitive to socio-personal stimuli depending on their level of romantic satiation. If an individual’s goal-state has no impact on the way he or she perceived the environment, romantic satiation would be expected to predict socio-personal sensitivity level for those with a romantic goal-state and a financial goal-state—this was not the case.
Further, as the college student sample responded differently to stimuli and noticed different stimuli, depending on their goal-state, and it is unlikely college students are still impacted by the onset of formal operations—a different explanation for young adolescents’ hypersensitivity is, at the very least, plausible.

**Hypothesis 2**

The next hypothesis predicted that individuals would learn more information when the information is relevant than when the information is not relevant. This hypothesis sought to understand if Tolman’s tenet, organisms’ rate of learning will be determined by the demand for the outcome, could be generalized to humans. To test this possibility, scores on the instrument testing the respondents’ ability to recall information about the volume perceived as most relevant were compared to the respondents’ scores on the test inquiring about volume of least relevance. If Tolman’s tenet is generalizable to humans, more information should be recalled about the most relevant volume than the least relevant volume.

As predicted, a paired sample $t$ test revealed a significant difference [$t(212) = 9.57, p < .05, \eta_p^2 = .30$] between respondents’ score on the most relevant volume ($M = 3.06, SD = 3.02$) and the least relevant volume ($M = 1.16, SD = 1.70$). Another analysis was conducted examining only responses from SWU students. A paired sample $t$ test revealed a significant difference [$t(114) = 7.67, p < .05, \eta_p^2 = .34$]. SWU respondents scored higher on the test asking about the most relevant volume ($M = 3.42, SD = 2.86$) than the least relevant volume ($M = 1.37, SD = 1.86$). Next, a paired sample $t$ test was conducted, this time using only responses from the NEC. A significant difference was
again revealed \( t(97) = 5.80, p < .05, \eta_p^2 = .26 \). Respondents scored higher on the test asking about the most relevant volume \((M = 2.63, SD = 3.15)\) than the least relevant volume \((M = 0.92, SD = 1.46)\).

Next, since many students scored zero on tests for both the most and least relevant volume, it was determined these students may not have focused enough on the material for any learning to occur. Therefore, students scoring zero on both the most and least relevant volumes were removed. When those who scored zero on both tests were removed, the number of participants from the SWU was reduced to 58 and the number of participants from the NEC was reduced to 35.

When comparing all respondents' scores on the volume of most relevance \((M = 4.59, SD = 2.55)\) and the volume of least relevance \((M = 2.39, SD = 1.84)\) a significant difference was again revealed, \( t(92) = 7.97, p < .05, \eta_p^2 = .41 \). A significant difference \( t(57) = 6.21, p < .05, \eta_p^2 = .40 \) also emerged when making similar comparisons only among students from the SWU. Respondents scored higher on the test asking about the most relevant volume \((M = 4.60, SD = 2.28)\) than the test focused on the least relevant volume \((M = 2.52, SD = 1.92)\). Similarly, when only NEC students were included in the analysis, a significant difference again emerged, \( t(34) = 4.94, p < .05, \eta_p^2 = .42 \). NEC respondents scored higher on the test asking about the most relevant volume \((M = 4.57, SD = 2.97)\) than the least relevant volume \((M = 2.17, SD = 1.69)\).

These results indicate that college students indeed learn more when information is relevant than when it is not relevant. This finding was not necessarily surprising in light of Stormark and Torkildsen's (2004) research suggesting that adults with eating disorders...
focus more on food-relevant stimuli than stimuli not perceived as equally relevant. This also offers an explanation as to why many young adolescents are so focused on peer relations—other information is perceived as less relevant.

Nonetheless, this finding should be of interest to those teaching adolescents and/or trying to influence adolescents through health promotion efforts. If adolescents learn more about relevant information, this biased processing may lead adolescents to focus excessively on information perceived as relevant, possibly at the expense of information the adolescent perceives as irrelevant. For example, two different adolescents may see the same drug commercial showing an overdosed teenager in a hospital surrounded by peers and family in two different ways. One adolescent may perceive the message as focusing on the harms of drug use, while the other may only learn about the “benefits” of drug use—attention from peers and family.

**Hypothesis 3**

The third hypothesis predicted that an individual’s willingness to endure discomfort would be related to the intensity of the need to reach the desired goal-state. This hypothesis was generalized from Tolman’s tenet: organisms’ willingness to endure discomfort will be influenced by the demand for the expected outcome. This is a very different explanation of risk behavior than assertions of adolescent perceptions of invulnerability. Rather than risk-taking being considered the product of false perceptions of invulnerability, this hypothesis posits risk-taking is the product of an increased desire to obtain the associated outcome. Elkind proposed adolescents behave without fear of injury due to a belief of self-immortality. I, on the other hand, argue that adolescents
might be aware of the potential injury but believe the outcome is important enough to accept the risk.

To test this hypothesis, respondents’ need for their desired goal-state was compared with respondents’ willingness to accept different levels of risk. It was predicted the more respondents needed to reach their desired goal-state, the greater risk of physical pain they would be willing to endure.

A Pearson’s correlation assessed the relationship between the respondents’ self-reported need to reach their “perfect world” and the respondents’ willingness to risk extreme physical pain. The analysis revealed a significant relationship, two-tailed, between the two variables (r = .163, p = <.05). Next, I divided the sample based on academic institution. When only the responses from the SWU were assessed, a significant correlation again emerged (r = .231, p = <.05). However, the correlation between the two variables was not significant when assessing responses of those from the NEC (r = .077, p = .46).

The lack of relationship found when examining only students from the NEC is troubling. However, items used for this analysis appeared at the end of the long survey. Most instruments were counterbalanced, however the perfect world scenario and the negative life event question were both placed at the end of the survey to avoid emotional contamination when filling out the various psychological measures. It is feasible that less care was taken as the respondents neared the end of the survey.

The findings obtained from the SWU sample, but not the NEC sample, suggest Tolman’s tenet is generalizable to college students. Respondents reported a greater
willingness to risk extreme physical pain when the outcome was more desirable. Whether or not invulnerability also plays a role in adolescent risk-taking is uncertain, but this finding indicates a very different explanation of adolescent risk-taking: adolescents are aware of potential physical harm but accept the risk out of a strong desire for the outcome. If the invulnerability explanation is accepted, although this explanation has not been supported by prior empirical research, interventions designed to reduce adolescent risk-taking should focus on convincing adolescents they are vulnerable to pain. If it is accepted that greater risks are taken due to a greater desire for the outcome, as the current findings from the SWU suggest, interventions should focus on instructing adolescents on different ways to obtain their perfect world without risking physical pain. Another approach would be to convince risk-takers their perceptions of the reward associated with the physical risk might be inaccurate.

Summary

The rationales for the first three hypotheses were not based on adolescent-specific research but on past research on animals. Rather than seek an adolescent-specific explanation for adolescent behavior, it was predicted that adolescents behave like other animals when placed in similar situations. While the findings may not be surprising in and of themselves, the fact that these predictions spawned from observations of animal behavior suggests at least some patterns of adolescent behavior are not unique to adolescents. The college students surveyed for this current research effort responded to socio-personal stimuli in a manner similar to the way hungry animals are expected to behave. These findings call into question the adolescent-specific hypotheses responsible
for imaginary audience and personal fable research. The findings also suggest it may be advantageous to look at the context and antecedents of adolescent behavior rather than the behavior itself.

**Disruption**

The next set of hypotheses focus on disruption. The notion of disruption was generalized from Tolman’s work as well as Erikson’s. Both described organisms emitting a similar response after experiencing a negative change. Tolman’s observations were focused on animals, Erikson’s on adults. Tolman proposed disruption occurs as the result of an organism’s cognitive expectations being violated. Few can argue that adolescence is a time of violations, adjustment, more violations, and readjustment. This next set of hypotheses was designed to test if a state of disruption leads to behavior associated with adolescence.

As discussed earlier, 40 (18.6%) respondents were categorized as being in a state of disruption. However, hindsight led to questioning whether only those whose desired goal-state matched their disrupted goal-state should be considered as possibly being in a state of disruption. For example, an individual may have a disrupted romantic goal-state but believe that reaching a financial goal-state will make life perfect. Under the current categorization scheme, this individual would not be considered to be in a state of disruption regardless of the individual’s need for the desired goal-state or the intensity of the negative life event. It seemed reasonable to eliminate the matching disrupted goal-state and desired goal-state from the criteria.
Nonetheless, I will first present the results obtained with disruption categorized as originally planned. After the results of these hypotheses and a research question are presented, the reconfigured disruption categorization scheme will be put forth. I will refrain from extensively discussing each hypothesis until the second round of analyses, conducted under the newly created disruption categorization scheme, is presented.

**Hypothesis 4**

The fourth hypothesis predicted individuals in a state of disruption would be more sensitive to their socio-personal environment than those not in a state of disruption. An Independent \( t \) test revealed no significant difference in socio-personal sensitivity between those in a state of disruption \((M = 2.78, SD = .83)\) and those not in a state of disruption \((M = 2.82, SD = .73)\).

**Hypothesis 5**

The next hypothesis predicted those in a state of disruption will report higher perceived stress, lower self esteem, higher anxiety, and lower stability than those not in a state of disruption. An Independent \( t \) test revealed a significant difference \([ t(212) = 3.51, p < .05, \eta^2_p = .06]\) in reported perceived stress between those in disruption \((M = 2.24, SD = .53)\) and those not in disruption \((M = 1.92, SD = .41)\). A significant difference \([ t(212) = 2.42, p < .05, \eta^2_p = .03]\) was also revealed when stability of self scores of individuals in disruption \((M = 2.27, SD = .68)\) were compared to individuals not in a state of disruption \((M = 2.57, SD = .70)\). No significant difference emerged when comparing self-esteem levels of those in disruption \((M = 2.96, SD = .42)\) to participants not in a state of disruption \((M = 3.07, SD = .54)\). Similarly, no significant difference emerged when
comparing levels of anxiety between those in disruption ($M = 0.75, SD = .43$) to those not in a state of disruption ($M = 0.67, SD = .48$).

**Research Question 2:**

This research question asked if individuals in a state of disruption perceived others’ opinions, regarding these issues of most relevance, to be more similar to their own when compared to those not in disruption. To answer this question, respondents were asked to state how much they worry about the topic of greatest concern to them. Next, respondents were asked to indicate how they believed other people worried about the same topic. The absolute difference between how much the respondent worried about the topic of greatest concern and how much they believed other people worried about the same topic constituted the respondents’ score for this analysis. A two-tailed Independent $t$ test, revealed no significant difference between scores of disrupted individuals ($M = 1.16, SD = 1.12$) and scores of non-disrupted individuals ($M = 1.20, SD = 1.21$).

**Disruption: A Second Approach**

As mentioned earlier, a decision was made to reconfigure the criteria for determining whether respondents should be coded as being in a state of disruption. The necessity of requiring disrupted individuals to have a matching disrupted and desired goal-state was considered. While 108 respondents had negative life event intensity scores and need for perfect world scores that could place them in the disrupted category, only 40 (37.0%) of these respondents reported matching desired and disrupted goal-states. In other words, 68 respondents could have been categorized as being in a state of disruption; however, their desired goal-states and disrupted goal-states were different. The first step
was to assess if there were any significant difference between those who did and did not report matching goal-states.

Comparisons were made between individuals who were originally categorized as disrupted and individuals who would have been categorized as disrupted if their desired goal-state matched their disrupted goal-state. Independent $t$ tests revealed no statistically significant difference between the two groups regarding levels of socio-personal sensitivity, academic satiation, PSS-Family, PSS-Peer, perceived stress, financial satiation, stability of self, self-esteem, anxiety, and willingness to risk physical pain (see Table 16). Those with matching disrupted and desired goal-states did not statistically differ on any variables of current interest.

I next considered whether respondents’ negative life event intensity was worthy of further exploration. As reported in Table 9, respondents’ scores on the intensity of negative life event measure were significantly correlated with socio-personal sensitivity, perceived stress, stability of self, self-esteem, anxiety, and academic satiation. This indicates the greater the intensity of respondents’ negative life events, the more sensitive they are to socio-personal stimuli, the more stressed they are, the less stability of self they report, the less self-esteem they report, the more anxious they feel, and the less satiation they report regarding academics.

Together these findings indicate 1) the original categorization of disruption contained an unnecessary requirement, and 2) respondents negative life event intensity is related to several outcome measures of interest. As such, a new definition of disruption was considered. Respondents who scored higher than four regarding their need for a
Table 16

Group Differences Between Participants Originally Categorized as Disrupted (Group 1) and Participants Not Categorized as Disrupted Due to Non-Matching Disrupted and Desired Goal-States (Group 2)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group 1 (n = 40)</th>
<th>Group 2 (n = 68)</th>
<th>df</th>
<th>t*</th>
</tr>
</thead>
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<tr>
<td>Socio-Personal Sensitivity</td>
<td>2.78 0.73</td>
<td>3.03 0.93</td>
<td>106</td>
<td>1.45</td>
</tr>
<tr>
<td>Academic Satiation</td>
<td>2.17 0.48</td>
<td>2.30 0.54</td>
<td>106</td>
<td>1.24</td>
</tr>
<tr>
<td>PSS-Family</td>
<td>3.17 0.64</td>
<td>3.02 0.62</td>
<td>106</td>
<td>1.20</td>
</tr>
<tr>
<td>PSS-Peer</td>
<td>3.06 0.61</td>
<td>3.11 0.49</td>
<td>102</td>
<td>0.50</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>2.24 0.41</td>
<td>2.20 0.49</td>
<td>106</td>
<td>0.47</td>
</tr>
<tr>
<td>Financial Satiation</td>
<td>1.93 0.78</td>
<td>2.00 0.72</td>
<td>106</td>
<td>0.49</td>
</tr>
<tr>
<td>Stability of Self</td>
<td>2.27 0.68</td>
<td>2.36 0.68</td>
<td>106</td>
<td>0.70</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>2.96 0.43</td>
<td>2.36 0.68</td>
<td>106</td>
<td>0.07</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.75 0.43</td>
<td>0.89 0.51</td>
<td>106</td>
<td>1.47</td>
</tr>
<tr>
<td>Willingness to Risk</td>
<td>3.93 2.83</td>
<td>3.75 2.78</td>
<td>105</td>
<td>0.32</td>
</tr>
</tbody>
</table>

*None of the mean scores from the two different institutions statistically differ from each other, p < .05, two-tailed.
desired goal-state and intensity of a negative life event were considered to be in a state of disruption while those not reporting such need and intensity were considered to not be in a state of disruption. In total 108 respondents were considered to be in a state of disruption and 106 were not. Table 17 reports the demographic characteristics of these two groups.

The last three hypotheses all involved the disruption construct. The rationale for these hypotheses, as mentioned earlier, is based on the work of Tolman and Erikson. Tolman described a monkey that had its expectations negatively violated. The disrupted monkey expressed anger, confusion, and aggression. Erikson described a soldier who felt insecure and who was hypersensitive to certain stimuli after a negative experience. Combined, disrupted beings would act angry, confused, insecure, and should be hypersensitive to relevant stimuli. I argue those in disruption will behave in a manner matching the behavior of many young adolescents, i.e. anxiousness, low-self esteem, low stability of self, high stress, and high socio-personal sensitivity.

**Hypothesis 4 (second analysis)**

This hypothesis predicted those in a state of disruption would report stronger socio-personal sensitivity than those not in a state of disruption. This prediction is in accord with Erikson’s observations of the ex-medical soldier, discussed earlier. The soldier was in a state of disruption and was hypersensitive to relevant stimuli. If this can be generalized to adolescents, those in a state of disruption should be more sensitive to socio-personal information than those not in a state of disruption.

On average, those categorized as being in a state of disruption reported
Table 17

Demographic Characteristics of Disrupted (n = 106) and Non-Disrupted Participants Using the Second Categorization of Disruption (n = 108)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Disrupted</th>
<th></th>
<th>Non-Disrupted</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td><strong>Institution</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWU</td>
<td>62</td>
<td>53.9%</td>
<td>53</td>
<td>46.1%</td>
</tr>
<tr>
<td>NEC</td>
<td>46</td>
<td>46.5%</td>
<td>53</td>
<td>53.5%</td>
</tr>
<tr>
<td><strong>Age at time of survey (years)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>43</td>
<td>46.7%</td>
<td>49</td>
<td>53.3%</td>
</tr>
<tr>
<td>19</td>
<td>43</td>
<td>55.8%</td>
<td>34</td>
<td>44.2%</td>
</tr>
<tr>
<td>20</td>
<td>17</td>
<td>58.6%</td>
<td>12</td>
<td>41.1%</td>
</tr>
<tr>
<td>21</td>
<td>5</td>
<td>31.3%</td>
<td>11</td>
<td>68.8%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>73</td>
<td>54.9%</td>
<td>60</td>
<td>45.1%</td>
</tr>
<tr>
<td>Male</td>
<td>35</td>
<td>43.2%</td>
<td>46</td>
<td>56.8%</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>6</td>
<td>42.9%</td>
<td>8</td>
<td>57.1%</td>
</tr>
<tr>
<td>Black/African American</td>
<td>14</td>
<td>53.8%</td>
<td>12</td>
<td>46.2%</td>
</tr>
<tr>
<td>Hispanic or Latino/Latina</td>
<td>16</td>
<td>57.1%</td>
<td>12</td>
<td>42.9%</td>
</tr>
<tr>
<td>White or Caucasian (non-Hispanic)</td>
<td>65</td>
<td>49.2%</td>
<td>67</td>
<td>50.8%</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>50.0%</td>
<td>7</td>
<td>50.0%</td>
</tr>
</tbody>
</table>
significantly \( t(211) = 2.36, p < .05, \) two-tailed, \( \eta_p^2 = .03 \) higher socio-personal sensitivity \((M=2.94, SD=.87)\) than those not in a state of disruption \((M=2.68, SD=.72)\). This indicates that individuals who experienced an intense negative life event, and who also reported a strong need for their perfect world, were significantly more sensitive to socio-personal stimuli than those who did not report both an intense negative life event and/or a strong desire for their perfect world.

**Hypothesis 5 (second analysis)**

The next hypothesis predicted individuals in a state of disruption would report higher anxiety, higher perceived stress, less self-esteem, and less stability of self when compared to those not in a state of disruption. The rationale for this prediction is similar to that of the prior hypothesis. Disruption is proposed to be an upset in behavior caused by unexpected negative change. In addition to a heightened sensitivity to socio-personal stimuli, the result of these changes is hypothesized to be associated with an increase in psychological disturbance.

An Independent \( t \) test revealed a significant difference, two-tailed, between disrupted and non-disrupted participants, in the predicted direction, across all four variables (see Table 18).

**Research Question 2 (second analysis)**

This research question asks if individuals in a state of disruption are unable to separate their concerns from the concerns of others. This question seeks to explore Elkind’s observation that led him to posit that adolescents are unable to differentiate their thoughts from others’ due to the emergence of formal operations. A rival hypothesis is
Table 18

**Group Differences Between Disrupted (n = 106) and Non-Disrupted Participants’ (n = 108) Responses to Four Different Psychological Measures**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Disrupted</th>
<th>Non-Disrupted</th>
<th>df</th>
<th>t</th>
<th>(\eta^2_p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>0.84</td>
<td>0.53</td>
<td>212</td>
<td>4.93*</td>
<td>.10</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>2.21</td>
<td>1.75</td>
<td>212</td>
<td>7.17*</td>
<td>.20</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>2.95</td>
<td>3.15</td>
<td>212</td>
<td>2.85*</td>
<td>.04</td>
</tr>
<tr>
<td>Stability of Self</td>
<td>2.33</td>
<td>2.71</td>
<td>212</td>
<td>4.04*</td>
<td>.07</td>
</tr>
</tbody>
</table>

*Note: \(p < .05\), two-tailed
that adolescents have the ability to differentiate their thoughts from others but are so focused on their thoughts they can not imagine that others would not share their concerns. These two rationales offer opposing explanations for the same behavior. The key difference is that Elkind attributed the inability to separate one’s concerns from those of others to a process that only occurs in adolescence. The rival hypothesis proposes all humans assume others share their concerns but more so when the topic is of extreme self-relevance. Adolescents may overestimate the importance of more issues than adults but the overall process is argued to be the same.

To test this hypothesis, the difference between how much each respondent reported worrying about the topic he or she worries about most was compared to how much the respondent thinks other people worry about the same topic. The absolute difference scores of those in a state of disruption were compared to the absolute difference scores of those not in a state of disruption. An Independent t test revealed no significant, two-tailed, difference between the two groups on this measure. Those in a state of disruption \(M = 1.24, SD = 1.25\) did not significantly differ on this measure from those not in a state of disruption \(M = 1.14, SD = 1.13\).

**Research Question 2 (third analysis)**

One possible explanation for the lack of significant difference is that individuals do overestimate the similarity between their concerns and others but disruption is not relevant to this process. Individuals might be so focused on their own thoughts that they could not imagine that others would not share their concerns. If this rationale is correct, respondents should perceive less of a difference between their concerns and the concerns
of others when the issue is of high importance but should accept others' concerns may differ when the issue is perceived to be of low importance. In other words, do humans assume that what they see as important must also be important to everyone? If so, this would support Elkind's argument that adolescents are unable to separate their concerns from others. However, if Elkind is accurate, individuals should be equally unable to consider that issues they find unimportant are possibly important to others. If the rival explanation is accurate, then individuals should be more willing to accept that other opinions may vary, if they are not so focused on the issue that it is inconceivable that everyone else is not as focused.

To test this possibility, a new variable was created. In addition to scores computed based on the difference between how much a respondent worries about the topic of greatest worry and how much the respondent thinks others worry about the same topic, scores were also computed to represent a similar difference in the volume perceived to be of least worry to the respondent. The analysis involved comparing the difference between an individual's self-concern about the topic worried about most and the individual’s perception of how much others worry about the same topic, with the difference between the individual’s self-concern of the topic worried about least and the individual’s perception of how much others worry about the same topic.

A paired sample $t$ test revealed a significant difference [$t(193) = 4.96, p < .05, \eta^2_p = .11$]. Respondents perceived significantly less difference between their level of concern and others’ level of concern when the topic was of most self-worry ($M = 1.18, SD = 1.19$) than when the topic was of least self-worry ($M = 1.79, SD = 1.49$).
General Discussion

Elkind said adolescents’ inability to accurately consider other people’s thoughts is at the center of adolescent egocentrism. The current findings indicate adolescents’ inability to think about the thoughts of others may not be adolescent specific. Elkind theorized adolescents to be self-occupied. However, the current findings indicate college students also overestimate how much others share their concerns. The finding indicate that when something is of great concern, humans overestimate how much others are concerned and when something is of little concern humans consider that other people may hold different views of an issues’ importance. Considering the vast changes and challenges faced during adolescence, it is plausible these changes and challenges lead to heightened worry on the part of the adolescent. If adolescents are so impacted by the changes and challenges they face, all topics may become topics of greatest concern. The result: adolescents are unable to separate their concerns from those of others. This behavior is similar to behavior described by Elkind; however, the reason for the behavior and the suggested non-adolescent-specific nature of the behavior is quite different. Future research needs to test adolescents’ ability to separate concerns on topics of least interest. Future research also needs to test adults’ ability to do the same on topics of greatest interest. Adults and adolescents may be more similar than different. If so, textbooks written for teachers will hopefully cease limiting the inability to separate one’s thoughts from others’ thoughts to adolescents.

The first set of hypotheses posited that adolescent behavior could be explained by looking at behavior of adults and other organisms. The predictions were primarily
supported. However, this begs the question, if adolescent behavior follows the same rules of behavior as that of adults and other organisms, why do adolescents behave as they do?
Tolman proposed disruption is caused by a violation of cognitive expectations. Considering adolescence is a time of extreme change and readjustment, adolescents should be expected to experience a great deal of disruption. While this current research did not investigate how many young adolescents are in a state of disruption, I did examine if college students in a state of disruption exhibit behavior similar to the “typical adolescent.”

The first disruption hypothesis predicted individuals in disruption would exhibit greater socio-personal sensitivity than those not in a state of disruption. This hypothesis was supported. Those in a state of disruption were more sensitive to socio-personal stimuli than those not in a state of disruption. If adolescence is a time of changing social reality, and changing social reality can cause disruption leading to heightened socio-personal sensitivity, adolescent self-consciousness should be expected. Adolescents who face an ever-changing social environment should be expected to be extremely sensitive to any stimuli perceived to be relevant. If adolescents are hypersensitive to their peers, they should not be considered egocentric but merely human.

The next hypothesis also predicted that those in a state of disruption would exhibit higher stress, greater anxiety, lower self-esteem, and lower stability of self than those not in a state of disruption. Adolescents are frequently considered to be on an identity search. Results indicate individuals in disruption exhibit less stability of self than those not in a state of disruption. Further, those in disruption also exhibit less self-esteem, more
perceived stress, and more anxiety than those not in a state of disruption. If an adolescent exhibits such behavior, a plausible explanation, other than teen rebellion, could be that the individual recently faced a negative violation of expectations which led to a strong need for a desired goal-state. Again, I am not arguing adolescents do not exhibit socio-personal sensitivity, perceived stress, anxiety, low self-esteem, low stability of self, or an inability to separate their concerns from the concerns of others. I am arguing this process is not unique to adolescence. Adolescence may be a time of extreme change but it is this extreme change that leads to behavior indicative of adolescence, not a magical adolescent-specific metamorphosis.
CHAPTER V

CONCLUSION

I proposed a different approach to interpreting adolescent behavior. This rationale differs from previous theories in that adolescents are argued to behave just like other humans, and organisms, when placed in situations of extreme change and adjustment. In general, the results are important in that they support changing the way adolescent behavior is interpreted and discussed.

Specifically, results indicate that college students are hypersensitive to certain stimuli; however, this hypersensitivity cannot be attributed to processes unique to early adolescence. Individuals will be hypersensitive to different stimuli depending on their desired end-state, and how much they perceive they need to reach their desired end-state. In other words, sensitivity to socio-personal stimuli will depend on more than level of egocentrism or level of interpersonal connectivity.

The results of this current study also suggest individuals most sensitive to socio-personal stimuli will also have lower self-esteem, lower stability of self, higher perceived stress, and higher anxiety, than those less sensitive. Further, the more sensitive respondents are to socio-personal stimuli, the greater the need for reaching their desired goal-state and the greater the risk they will be inclined to take in trying to do so. The individual’s perfect world will influence which information-content will be most remembered--the results specifically suggest college students learn more about relevant information than irrelevant information. The results also suggest college students are
more likely to believe everyone worries about topics they worry about, while accepting not everyone worries about topics they do not worry about.

These results do not suggest Elkind was incorrect in stating that the emergence of formal operations can lead young adolescents to behave as follows: 1) act in a self-focused manner, 2) behave as if unable to differentiate between thoughts of others and the adolescent’s own, 3) respond to certain environmental stimuli in a hypersensitive manner, 4) engage in social fantasies focusing on others’ response to their behavior, 5) act as if they are individually unique, and 6) behave as if invulnerable to physical harm. The results also do not suggest Lapsley & Murphy (1985) were wrong in attributing behavior indicative of the imaginary audience and the personal fable to changes in the nature of interpersonal relationships. Nor do the results indicate O’Connor (1995) was incorrect in attributing such adolescent behavior to changes in identity. Rather, the results indicate all may be correct due to focusing on different aspects of extreme change faced by young adolescents.

Tolman theorized that organisms become hypersensitive to relevant stimuli when they enter a drive state. This drive state is caused by disequilibrium due to hunger, thirst, or the like. Tolman put forth the term disruption to describe an upset in behavior caused by expectancy violations. Erikson discussed the loss of ego identity but later stated what he really meant was changing social reality. Are there many times of changing social reality and expectation violations that rival the period of adolescence? Furthermore, based on these results it can be argued that all adolescents do not process and remember
information in the same manner. Adolescents will vary on what they focus on and what they recall.

These results indicate the need for greater understanding and empathy regarding adolescents. As Elkind discussed, young adolescents begin to obtain the ability to think hypothetically. What would happen to adults if they began to acquire new cognitive abilities? In addition, adolescents usually face enormous social change. For possibly the first time, children learn they are not living in a parental bubble of protection. Imagine a five-year old holding on to a parent’s leg. The child likely feels the parent will keep him or her safe. At some point the power of the parent is reduced and children have to fend for themselves—disruption likely occurs at this point.

When interpreting adolescent behavior it is also important to consider that due to a state of disruption, adolescents may be learning how to survive in their new environment in a biased fashion. This current research suggests that college-students focus on relevant information significantly more than irrelevant information, and the individual determines the relevance level. Young adolescents, while going through a myriad of changes, are trying to figure out how to satisfy the drive-like state brought on by disruption. As such, they are hypersensitive to relevant information, and remember more of what they learn. How much should adolescents be trusted to properly perceive their social environments? Intervention is needed unless it is believed that hypersensitive adolescents are skillful enough to accurately decipher their social environment. This is especially important when considering that the more individuals want to reach a goal-state, the more physical risks they are willing to endure to get there.
The current findings also suggest a different approach for creating health promotion messages targeting adolescents. If an adolescent perceives that using inhalants or doing drugs will be a strategic step towards reaching a desired end-state and the adolescent has a great need to reach this desired end-state, then focusing on the physical harms of drug use will likely be futile. However, success may be obtained by convincing the adolescent that the desired end-state will not lead to the expected utopia and/or by convincing the adolescent that using drugs will impair his or her ability to reach the desired end-state. Success in this domain will only occur, however, if messages targeted at adolescents take the findings herein into account.

These results indicate college students will learn significantly less about messages perceived to be irrelevant than messages perceived to be relevant to their lives. Further, the more humans perceive a need for a desired end-state, the more hypersensitive they are to relevant information. If future researchers can ascertain which end-states are most likely to lead to drug use, for example, messages can be targeted to ensure maximum processing on the part of the target audience.

Limitations

A few limitations need to be kept in mind when interpreting these results. First, analyses were all conducted with cross-sectional data. No conclusions of causality can be made.

Next, this current study used several newly created measures. Further examination of these measures is warranted. Specifically, while the Socio-Personal Sensitivity Scale produced internally consistent scores for the pilot’s middle school sample and this current
study’s college student samples, additional reliability tests are needed. Also, while the perfect world scenario appears to have successfully garnered the desired information for both the pilot’s middle school sample and this current study’s college student participants, further exploration of this instrument, especially among multi-cultural populations, is needed. Exploration of the elasticity of one’s socio-personal sensitivity, one’s desired goal-state, and goal-state need can increase confidence in this current study’s findings.

Another limitation is the lack of decorum I was able to obtain from the NEC sample. Results concerning the relationship between one’s perfect world need and the willingness to take risks are less convincing due to a significant correlation emerging when the SWU’s responses were analyzed ($r = .23$, $p < .05$), but not when the NEC’s responses were analyzed ($r = .08$, $p = .46$). As mentioned earlier, the two instruments used to test this relationship were among the last of a long survey. It is likely the NEC sample lost focus, thereby increasing error. Nonetheless, both results must be considered.

**Future Research**

In addition to a few avenues of future research discussed above, there are several necessary steps that need to occur prior to further exploration and application. First, the current research needs to be replicated with adolescent and adult samples. This will allow further exploration of the constructs as well as the instruments used to explore the constructs. Further, replication should include the addition of longitudinal methodology. As just mentioned, while the framework proposes directionality, the methodology used
does not allow for causal conclusions. A panel-study where pre-adolescents are interviewed three times a year for three to five years can provide a wealth of insight.

Exploration of adolescents’ desired goal-states is also warranted. Knowing the adolescents’ goal-states can help understand the information to which adolescents will be most sensitive. This information can be useful in crafting efforts to influence adolescents. Similarly, researchers need to explore why adolescents believe different end-states will make life better. Do all adolescents exhibit similar patterns of cognitive and social-cognitive errors? What role does the media play in adolescents’ perfect-world perceptions? In addition to understanding errors made regarding the utopian outcome expected to accompany a desired goal-state, researchers must also explore the patterns of social-cognitive errors regarding the actions perceived to lead to a desired goal-state. Can learning about, and then correcting, common errors made during adolescence reduce maladaptive behaviors?

Piaget studied patterns of errors made by younger children. Can similar patterns be discovered in the social thought processes of adolescents? Learning such patterns can be of great assistance in ensuring adolescents do not make decisions that lead to irreversible error. Few would question or fault young children for failing Piaget’s conservation task. The advantage is that the conservation task is easy to demonstrate. Might there be a social scenario that can highlight adolescent errors in a similar fashion?

Considering the current results, it may also be efficacious to learn of the occurrences most likely to lead different adolescents into a state of disruption. This will allow interventions to minimize disruption among adolescents. As suggested by
Simmons, Rosenberg, and Rosenberg's (1973) results, youth facing a transition to middle school after fifth grade may experience greater disruption than those who remain in the same school. Disruption may also allow for a greater understanding of the impact of traumatic experiences, such as parental divorce, may have on adolescent behavior.

Lastly, while the current research effort focused on a different approach towards adolescent behavior, the proposed explanation is not based on adolescent-specific processes, nor should it be limited to explaining adolescent behavior. I mentioned earlier that risk-taking is perceived to be most prevalent among adolescents because of how risk-taking is defined. If, for example, adultery, obesity, and cheating on one's taxes were added to the definition of risk-taking, many adults would fall into the category of risk-taker. Just as it can be useful to learn about the errors made by adolescents regarding their desired end-state, the same applies to adults. Few would argue adolescents have a monopoly on bad decisions due to overestimating the utopia of a desired end-state or what steps would lead them there. Considering some errors made by adults invariably impact children, this should possibly be considered as being of equal, if not greater, priority.
APPENDIX A

HUMAN SUBJECTS CONSENT FORM

...
SUBJECT'S CONSENT FORM

The imaginary audience, the personal fable, and a rival hypothesis

I AM BEING ASKED TO READ THE FOLLOWING MATERIAL TO ENSURE THAT I AM INFORMED OF THE NATURE OF THIS RESEARCH STUDY AND OF HOW I WILL PARTICIPATE IN IT, IF I CONSENT TO DO SO. SIGNING THIS FORM WILL INDICATE THAT I HAVE BEEN SO INFORMED AND THAT I GIVE MY CONSENT. FEDERAL REGULATIONS REQUIRE WRITTEN INFORMED CONSENT PRIOR TO PARTICIPATION IN THIS RESEARCH STUDY SO THAT I CAN KNOW THE NATURE AND RISKS OF MY PARTICIPATION AND CAN DECIDE TO PARTICIPATE OR NOT PARTICIPATE IN A FREE AND INFORMED MANNER.

PURPOSE

I am being invited to participate voluntarily in the above-titled research project. The purpose of this project is to understand how people perceive their world and how that impacts the decisions they make.

SELECTION CRITERIA

I am being invited to participate because I am in a class that was selected for participation, am greater than 18 years of age and my teacher has agreed to allow recruitment to take place in this classroom.

PROCEDURES

If I agree to participate I will be asked to read a summary of a new book-set for college students, answer some questions about the book-set, complete several questionnaires, and a couple of open-ended questions (25-40 minutes). If I choose not to participate there will be no negative repercussions for such a decision.

RISKS

There is no risk to me for participating in this research.

BENEFITS

This research will benefit the field of education and health education. The information obtained will be utilized to improve our understanding of human behavior.

CONFIDENTIALITY

Only the PI (Jason Siegel) will have access to the data. Further, my consent form will be collected separately from my responses. I am not to put my name on the survey. There will be no reasonable way of identifying what students responded in which manner.
PARTICIPATION COSTS AND SUBJECT COMPENSATION
There are no costs, except the 25-40 minutes it will take to complete the survey. I might receive extra credit from my participation. However, this will be based solely at the discretion of the instructor of this class.

CONTACTS
I can obtain further information from Jason Siegel, M.A., Ph.D. Candidate (520-975-6264). If I have questions concerning my rights as a research subject, I may call the Human Subjects Protection Program office at (520) 626-6721.
AUTHORIZATION
BEFORE GIVING MY CONSENT BY SIGNING THIS FORM, THE METHODS, INCONVENIENCES, RISKS, AND BENEFITS HAVE BEEN EXPLAINED TO ME AND MY QUESTIONS HAVE BEEN ANSWERED. I MAY ASK QUESTIONS AT ANY TIME AND I AM FREE TO WITHDRAW FROM THE PROJECT AT ANY TIME WITHOUT CAUSING BAD FEELINGS. MY PARTICIPATION IN THIS PROJECT MAY BE ENDED BY THE INVESTIGATOR FOR REASONS THAT WOULD BE EXPLAINED. NEW INFORMATION DEVELOPED DURING THE COURSE OF THIS STUDY WHICH MAY AFFECT MY WILLINGNESS TO CONTINUE IN THIS RESEARCH PROJECT WILL BE GIVEN TO ME AS IT BECOMES AVAILABLE. THIS CONSENT FORM WILL BE FILED IN AN AREA DESIGNATED BY THE HUMAN SUBJECTS COMMITTEE WITH ACCESS RESTRICTED TO JASON SIEGEL, M.A., PH.D. CANDIDATE (520-975-6264). I DO NOT GIVE UP ANY OF MY LEGAL RIGHTS BY SIGNING THIS FORM. A COPY OF THIS SIGNED CONSENT FORM WILL BE GIVEN TO ME.

Subject's Signature
Date

INVESTIGATOR'S AFFIDAVIT
I have carefully explained to the subject the nature of the above project. I hereby certify that to the best of my knowledge the person who is signing this consent form understands clearly the nature, demands, benefits, and risks involved in his/her participation and his/her signature is legally valid. A medical problem or language or educational barrier has not precluded this understanding.

Signature of Investigator
Date
FORM 1A
DEMOGRAPHIC INFORMATION

1) Are you a: _____ female _____ male

2) How old are you: _______

3) How do you describe yourself?
   a) American Indian/Native American or Alaska Native
   b) Native Hawaiian or Pacific Islander
   c) Asian
   d) Black/African American
   e) Hispanic or/Latino/Latina
   f) White or Caucasian (non-Hispanic)
   g) Other

4) Do you live on campus (in the dorms)? _____ YES _____ NO

5) Did you attend high school in Tucson? _____ YES _____ NO

6) What year did you graduate high school? _______

7) If you had to guess, what will your GPA be for this semester? ______

8) What is your major? If you have yet to decide, what do you think your major will be?
   ______________

9) How many semesters have you been at this University?
   a) This is my 1st semester
   b) This is my 2nd semester
   c) This is my 3rd semester
   d) This is my 4th semester
   e) This is my 5th semester
   f) This is my 6th semester
   g) This is my 7th semester
   h) This is my 8th semester
   i) This is my 9th semester
   j) This is my 10th semester
   k) This is my 11th semester
Different people have different concerns. For each of the following, please list how much you worry about each.

How much do you worry about parental/family relations?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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How much do you worry about academics?

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<th>6</th>
<th>Very Much</th>
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How much do you worry about peer relationships/companionship (friends)?

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<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Very Much</th>
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</table>

How much do you worry about your finances?

<table>
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<tr>
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<th>0</th>
<th>1</th>
<th>2</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>Very Much</th>
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How much do you worry about your career?

<table>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Very Much</th>
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How much do you worry about romantic relationships/companionship?

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<th>Not at all</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Very Much</th>
</tr>
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</table>

Please rank each of the following such that whatever you worry about most = 1, worry about the second most = 2 ...worry the least about = 6. Please only use each number, from 1 to 6, one time each.

_____ parental/family relations _____ finances

_____ academics _____ careers

_____ peer relationships _____ romantic relationships
The following describes a new set of books made specifically for the college student. Please read each one carefully. You will be asked about these different volumes later. Please think about which volume(s) are of greatest and of least interest to you.

**Volume 1: College Life and Parental/Family Relations – COST = $24.99**

This 200 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from over 1,000 interviews with college students and their families. Learn: 1) how to keep close with your parents during the college years, 2) help your parents understand your independence, 3) keep your parents from worrying. This is the 6th edition of this volume. This volume comes with a workbook and a CD version of the book. Free college t-shirt with your order! The College Book Club gave this volume a rating of 80.

**Volume 2: College Life and Academics – COST = $23.99**

This 220 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from 1,100 surveys filled out by college professors. Learn: 1) how to study so you remember the material and perform better on tests, 2) how to communicate with your professors, 3) how to write the perfect term paper. This is the 3rd edition of this volume. This volume does not contain a workbook, but does come with a CD version of the book. You can get a free 30-day trial! The College Book Club gave this volume a rating of 85.

**Volume 3: College Life and Peer Relationships/Companionship – COST = $21.99**

This 180 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from focus groups conducted with 1,300 college students. Learn: 1) how to make friends that will last a lifetime, 2) how to keep old friendships while making new ones, 3) how to make sure you never spend a Saturday night without people to hang out with. This is the 7th edition of this volume. This volume does not contain a workbook or CD version of the book. If you buy this volume, you can get another volume for half price. The College Book Club gave this volume a rating of 86.
Volume 4: College Life and Finances – COST = $20.99

This 230 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from focus groups conducted with 1,300 financial consultants. Learn: 1) find the best jobs for college students, 2) avoid credit card debt, 3) find scholarships and loans that fit your needs. This is the 5th edition of this volume. This volume comes with a workbook and a CD version of the book. You can get a free 30-day trial! The College Book Club gave this volume a rating of 81.

Volume 5: College Life and Career – COST = $22.99

This 210 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from over 100 interviews with financial consultants. Learn: 1) the good and the bad of various careers, 2) about the careers that will be hiring when your graduate, 3) how much different careers will pay. This is the 2nd edition of this volume. This volume does not contain a workbook or CD version of the book. If you buy this volume, you can get another for half price. The College Book Club gave this volume a rating of 84.

Volume 6: College Life and Romantic Relationships – COST = $19.99

This 190 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from over 100 interviews with male and female college students. Learn: 1) how to meet the person perfect for you, 2) how to maintain long distance relationships, 3) how to end relationships that are not working. This is the 4th edition of this volume. This volume comes with a workbook and a CD version of the book. Free college t-shirt with your order! The College Book Club gave this volume a rating of 83.
**Rank the Volumes**

Please think about the set of volumes you just read. Please rank the six volumes in order of which you feel is most relevant. If you could take one volume home for yourself, which one would you choose? Place a “1” next to the volume you are most interested; a “2” next to the second most...a “6” next to the one you are least interested in. Please only use each number, from 1 to 6, one time each.

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Volume</th>
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<tr>
<td></td>
<td>Volume 1: College Life and Parental/Family Relations</td>
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<td>Volume 2: College Life and Academics</td>
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<td>Volume 3: College Life and Peer Relationships/Companionship</td>
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<tr>
<td></td>
<td>Volume 5: College Life and Career</td>
</tr>
<tr>
<td></td>
<td>Volume 6: College Life and Romantic Relationships</td>
</tr>
</tbody>
</table>
Next, please think about the volume that you marked as least relevant. If you cannot recall a specific piece of information please mark or write “DK”.

Name of the volume_____________________________________

How much does this specific volume cost? ________

How many pages is the volume?______________

Is the advice presented within this volume based on:

_____ focus groups, _____ interviews, _____ surveys, _____ do not recall

How many focus groups, interviews, or surveys is the advice based?______________

Who gave advice for the volume?________________________

What are the three topics that the volume will cover?

1)_____________________________________________________

2)____________________________________________________

3)_____________________________________________________

What edition is the volume? _________________

Do you get a workbook with the volume? _____ Yes _____ No _____ Do not recall

Do you get a CD with the volume? _____ Yes _____ No _____ Do not recall

Does the volume come with (check as many as apply):

_____ Free 30-day trial

_____ Free college t-shirt

_____ Another volume at half price

_____ Do not recall

What rating did the book get from the College Book Club? _________________
Next, please think about the volume that you marked as most relevant. If you cannot recall a specific piece of information please mark or write “DK”.

Name of the volume: 

How much does this specific volume cost? 

How many pages is the volume? 

Is the advice presented within this volume based on:

- focus groups, interviews, surveys, do not recall 

How many focus groups, interviews, or surveys is the advice based? 

Who gave advice for the volume? 

What are the three topics that the volume will cover?

1) 

2) 

3) 

What edition is the volume? 

Do you get a workbook with the volume?  Yes  No  Do not recall

Do you get a CD with the volume?  Yes  No  Do not recall

Does the volume come with (check as many as apply):

- Free 30-day trial
- Free college t-shirt
- Another volume at half price
- Do not recall

What rating did the book get from the College Book Club? 


1) I wonder why people treat me the way they do.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

2) I wonder what people are thinking about me.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

3) I wonder what I can do to get people to like me more.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

4) I worry about other people talking about me.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

5) I imagine what other people are saying about me.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

6) I daydream what my future will hold.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

7) I wonder how people will respond when they hear about my life.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

9) I wonder how people would respond if something bad happens to me.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

10) When I overhear people talking, I wonder what they are talking about.
    a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always
Directions: The statements that follow refer to feelings and experiences that occur to most people at one time or another in their relationships with their families. For each statement there are four possible answers: strongly disagree (SD), disagree (D), agree (A), strongly agree (SA). Please circle the answer you choose for each item.

1. My family gives me the moral support I need.
2. I get good ideas about how to do things or make things from my family.
3. Most other people are closer to their family than I am.
4. When I confide in members of my family who are closest to me, I get the idea that it makes them uncomfortable.
5. My family enjoys hearing about what I think.
6. Members of my family share my interests.
7. Certain members of my family come to me when they have problems or need advice.
8. I rely on my family for emotional support.
9. There is a member of my family I could go to if I were feeling down, without feeling funny about it later.
10. My family and I are very open about what we think about things.
11. My family is very sensitive to my personal needs.
12. Members of my family come to me for emotional support.
13. Members of my family are good at helping me solve problems.
14. I have a deep sharing relationship with a number of members of my family.
15. Members of my family get good ideas about how to do things or make things from me.
16. When I confide in members of my family, it makes me uncomfortable.
17. Members of my family seek me out for companionship.
18. I think that my family feels that I’m good at helping them solve problems.
19. I don’t have a relationship with a member of my family that is as close as other people’s relationship’s with a family member.
20. I wish my family were much different.
Directions: The statements that follow refer to feelings and experiences that occur to most people at one time or another in their relationships with their friends. For each statement there are four possible answers: strongly disagree (SD), disagree (D), agree (A), strongly agree (SA). Please circle the answer you choose for each item.

SD D A SA 1. My friends give me the moral support I need.
SD D A SA 2. Most other people are closer to their friends than I am.
SD D A SA 4. Certain friends come to me when they have problems or need advice.
SD D A SA 5. I rely on my friends for emotional support.
SD D A SA 6. If I felt that one or more of my friends were upset with me, I’d just keep it to myself.
SD D A SA 7. I feel that I am on the fringe in my circle of friends.
SD D A SA 8. There is a friend I could go to if I were feeling down, without feeling funny about it later.
SD D A SA 9. My friends and I are very open about what we think about things.
SD D A SA 10. My friends are sensitive to my personal needs.
SD D A SA 11. My friends come to me for emotional support.
SD D A SA 12. My friends are good at helping me solve problems.
SD D A SA 13. I have a deep sharing relationship with a number of friends.
SD D A SA 14. My friends get good ideas about how to do things or make things from me.
SD D A SA 15. When I confide in friends, it makes me feel uncomfortable.
SD D A SA 16. My friends seek me out for companionship.
SD D A SA 17. I think that my friends feel that I’m good at helping them solve problems.
SD D A SA 18. I don’t have a relationship with a friend that is as intimate as other people’s relationships with friends.
SD D A SA 19. I’ve recently gotten a good idea about how to do something from a friend.
SD D A SA 20. I wish my friends were much different.
The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought in a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don’t try to count up the number of times you felt a particular way but rather indicate the alternative that seems like a reasonable estimate.

1. In the last month, how often have you been upset because of something that happened unexpectedly?
   0) Never 1) Almost Never 2) Sometimes 3) Fairly Often 4) Very Often

2. In the last month, how often have you felt that you were unable to control the important things in your life?
   0) Never 1) Almost Never 2) Sometimes 3) Fairly Often 4) Very Often

3. In the last month, how often have you felt nervous and “stressed”?
   0) Never 1) Almost Never 2) Sometimes 3) Fairly Often 4) Very Often

4. In the last month, how often have you dealt successfully with irritating life hassles?
   0) Never 1) Almost Never 2) Sometimes 3) Fairly Often 4) Very Often

5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?
   0) Never 1) Almost Never 2) Sometimes 3) Fairly Often 4) Very Often

6. In the last month, how often have you felt confident about your ability to handle your personal problems?
   0) Never 1) Almost Never 2) Sometimes 3) Fairly Often 4) Very Often

7. In the last month, how often have you felt that things were going your way?
   0) Never 1) Almost Never 2) Sometimes 3) Fairly Often 4) Very Often

8. In the last month, how often have you found that you could not cope with all things that you had to do?
   0) Never 1) Almost Never 2) Sometimes 3) Fairly Often 4) Very Often
9. In the last month, how often have you been able to control irritations in your life?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

10. In the last month, how often have you felt that you were on top of things?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

11. In the last month, how often have you been angered because of things that happened that were out of your control?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

12. In the last month, how often have you found yourself thinking about things that you have to accomplish?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

13. In the last month, how often have you been able to control the way you spend your time?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

---

1. I frequently wish my finances would improve.

   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree

2. I rarely think about my finances.

   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree

3. I worry about my finances.

   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
4. I frequently think about how I can improve my finances.
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree

5. I am happy with my current finances.
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
1. Does your opinion of yourself tend to change a good deal, or does it always continue to remain the same?
   
   a) Changes a great deal  b) Changes somewhat  
   c) Changes very little  d) Does not change at all

2. Do you ever find that on one day you have one opinion of yourself and on another day you have a different opinion of yourself?
   
   a) Yes, this happens often  b) Yes, this happens sometimes  
   c) Yes, this rarely happens  d) No, this never happens

3. I have noticed that ideas about myself seem to change very quickly
   
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree

4. Some days I have a very good opinion of myself; other days I have a very poor opinion of myself.
   
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree

5. I feel that nothing, or almost nothing, can change the opinion I currently hold of myself.
   
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree

1. I frequently wish I could find my soul mate.
   
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree

2. I rarely think about finding a desirable romantic situation.
   
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree

3. I wonder if I will ever find the perfect romantic partner.
   
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree

4. I frequently think about how my romantic relationship(s) can be improved.
   
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree

5. I am happy with my current romantic relationship situation.
   
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
Different people have different concerns. For each of the following, please list how much you think other people (your own age) worry about each. Other people refers to people of a similar age to yourself:

How much do other people worry about parental/family relations?

Not at all 0 1 2 3 4 5 6 Very Much

How much do other people worry about academics?

Not at all 0 1 2 3 4 5 6 Very Much

How much do other people worry about peer relationships/companionship?

Not at all 0 1 2 3 4 5 6 Very Much

How much do other people worry about finances?

Not at all 0 1 2 3 4 5 6 Very Much

How much do other people worry about their career?

Not at all 0 1 2 3 4 5 6 Very Much

How much do other people worry about romantic relationships/companionship?

Not at all 0 1 2 3 4 5 6 Very Much

Please rank each of the following such that whatever other thing other people (your own age) worry about most = 1, worry about the second most = 2 ... worry the least about = 6.

_____ parental/family relations  _____ finances

_____ academics  _____ career

_____ peer relationships  _____ romantic relationships
1. On the whole I am satisfied with myself
   a) Strongly Agree    b) Agree    c) Disagree    d) Strongly Disagree

2. At times I think I am no good at all
   a) Strongly Agree    b) Agree    c) Disagree    d) Strongly Disagree

3. I feel that I have a good number of qualities.
   a) Strongly Agree    b) Agree    c) Disagree    d) Strongly Disagree

4. I am able to do things as well as most other people.
   a) Strongly Agree    b) Agree    c) Disagree    d) Strongly Disagree

5. I feel I do not have much to be proud of.
   a) Strongly Agree    b) Agree    c) Disagree    d) Strongly Disagree

6. I certainly feel useless at times.
   a) Strongly Agree    b) Agree    c) Disagree    d) Strongly Disagree

7. I feel that I am a person of worth, at least on an equal plane with others.
   a) Strongly Agree    b) Agree    c) Disagree    d) Strongly Disagree

8. I wish I could have more respect for myself.
   a) Strongly Agree    b) Agree    c) Disagree    d) Strongly Disagree

9. All in all, I am inclined to feel that I am a failure.
   a) Strongly Agree    b) Agree    c) Disagree    d) Strongly Disagree

10. I take a positive attitude toward myself.
    a) Strongly Agree    b) Agree    c) Disagree    d) Strongly Disagree
Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling either:

0) Not at all  
1) Mildly, but it didn’t bother me much  
2) Moderately - it wasn’t pleasant at time  
3) Severely - it bothered me a lot

<table>
<thead>
<tr>
<th>Symptom</th>
<th>0) Not at all</th>
<th>1) Mildly</th>
<th>2) Moderately</th>
<th>3) Severely</th>
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<tbody>
<tr>
<td>1) Numbness or tingling</td>
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<td></td>
<td></td>
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<tr>
<td>2) Feeling hot</td>
<td></td>
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<tr>
<td>3) Wobbliness in legs</td>
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<tr>
<td>4) Unable to relax</td>
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<td>5) Fear of worst happening</td>
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<tr>
<td>6) Dizzy or lightheaded</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7) Heart pounding/racing</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8) Unsteady</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>9) Terrified or afraid</td>
<td></td>
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<tr>
<td>10) Nervous</td>
<td></td>
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<tr>
<td>11) Feeling of choking</td>
<td></td>
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<tr>
<td>12) Hands trembling</td>
<td></td>
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<tr>
<td>13) Shaky/unsteady</td>
<td></td>
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<tr>
<td>14) Fear of losing control</td>
<td></td>
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<td></td>
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<tr>
<td>15) Difficulty in breathing</td>
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<tr>
<td>16) Fear of dying</td>
<td></td>
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<td>17) Scared</td>
<td></td>
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<tr>
<td>18) Indigestion</td>
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<tr>
<td>19) Faint/lightheaded</td>
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<tr>
<td>20) Face flushed</td>
<td></td>
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<td></td>
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<tr>
<td>21) Hot/cold sweats</td>
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1) This semester, my academic performance has been just about what I expected when the semester began.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

2) I think I need an academic tutor.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

3) I am afraid I will not be as academically successful as I hoped.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

4) I need to figure out how I can do better in my classes.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

5) I am confident in my ability to get the grades I want.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

6) I thought I would be able to get better grades than I am currently getting.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

7) This semester is far easier than I thought it would be.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

8) I am unhappy with my academic performance thus far.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

9) When it comes to my academic performance, I need to try harder.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

10) I am happy with my current academic performance.

    A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

11) I worry about my grades.

    A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree
Next, I'd like you to think about the ONE THING you think would make your life perfect THIS YEAR! For example, "If only I knew what I wanted to do for a living, then my life would be perfect." "If only I had better friends, then my life would be perfect." "If only I had more money, then my life would be perfect." "If only I could fall in love, then my life would be perfect." "If only I could do better in school, then my life would be perfect." "If only I could get along better with my parents, then my life would be perfect."

Please tell me what you think would make your life perfect:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Why would this make your life perfect?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

1) How important is it for you to reach your "perfect world"?

| Not important | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Very Important |

2) How much is your future happiness dependent on you reaching your "perfect world"?

| Not Dependent | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Very Dependent |

3) How much time do you spend thinking about what it will be like to reach your "perfect world"?

| No Time | 0 | 1 | 2 | 3 | 4 | 5 | 6 | A lot of time |

4) What impact would it have on your life if your "perfect world" became reality?

| No Impact | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Large Impact |

5) How much do you need to reach your perfect world?

| No Need | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Large Need |
Please imagine there is a pill that can give you your perfect world. Whatever you wrote about is the life you will get. However, this pill is not perfect. There is a chance that if you take the pill, instead of giving you your perfect world, will be responsible for an extreme amount of physical pain. The likelihood of the pill causing physical pain will vary. Please read the statement below and mark each one “yes” or “no”.

1) If there is a 100% chance you will get the remaining aspects of your perfect world, and a 0% chance the pill will causes extreme physical pain, will you take it?  
   ____ YES  ____ NO

2) If there is a 90% chance you will get the remaining aspects of your perfect world, and a 10% chance the pill will causes extreme physical pain, will you take it?  
   ____ YES  ____ NO

3) If there is a 80% chance you will get the remaining aspects of your perfect world, and a 20% chance the pill will causes extreme physical pain, will you take it?  
   ____ YES  ____ NO

4) If there is a 70% chance you will get the remaining aspects of your perfect world, and a 30% chance the pill will causes extreme physical pain, will you take it?  
   ____ YES  ____ NO

5) If there is a 60% chance you will get the remaining aspects of your perfect world, and a 40% chance the pill will causes extreme physical pain, will you take it?  
   ____ YES  ____ NO

6) If there is a 50% chance you will get the remaining aspects of your perfect world, and a 50% chance the pill will causes extreme physical pain, will you take it?  
   ____ YES  ____ NO

7) If there is a 40% chance you will get the remaining aspects of your perfect world, and a 60% chance the pill will causes extreme physical pain, will you take it?  
   ____ YES  ____ NO

8) If there is a 30% chance you will get the remaining aspects of your perfect world, and a 70% chance the pill will causes extreme physical pain, will you take it?  
   ____ YES  ____ NO

9) If there is a 20% chance you will get the remaining aspects of your perfect world, and a 80% chance the pill will causes extreme physical pain, will you take it?  
   ____ YES  ____ NO

10) If there is a 10% chance you will get the remaining aspects of your perfect world, and a 90% chance the pill will causes extreme physical pain, will you take it?  
    ____ YES  ____ NO
Next, I’d like to ask you about any recent life events/changes you have experienced. Has anything negative, possibly unexpectedly, occurred that changed how you feel about yourself, your life, your relationships, or the world in general? Please describe one negative life change, event, or realization you believe is having the largest impact on your life and your feelings. In other words, what negative life change, event, or realization you experienced that has had the largest change on how you currently feel, behave, and/or see the world. This life change, event, or realization can be concerning yourself, relationships, college life, career, etc.

If there is more than one negative life change, event, or realization describe the ONE you believe has MOST impacted you, how you feel, and/or how you see the world. One way to think about which has had the greatest impact is to think about your thoughts over the past couple of weeks. What are these thoughts related to? Is there something you worry or stress about a lot, what are these thoughts related to? What has had the strongest negative impact on your current happiness level?

Please describe this change, event, or realization:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

How has this impacted your life, thoughts, or how you feel about others?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

How much do you worry/think about either this occurrence or things that occurred as a result?

Not at all 0 1 2 3 4 5 6 A lot

How much of an impact does this change, event, or realization currently have on you?

Not at all 0 1 2 3 4 5 6 A lot
DEMOGRAPHIC INFORMATION

1) Are you a: _____female _____male

2) How old are you: ________

3) How do you describe yourself?
   a) American Indian/Native American or Alaska Native
   b) Native Hawaiian or Pacific Islander
   c) Asian
   d) Black/African American
   e) Hispanic or/ Latino/Latina
   f) White or Caucasian (non-Hispanic)
   g) Other

4) Do you live at the same address where you lived while you were in high school? _____YES _____NO

5) Did you attend high school in Brooklyn? _____YES _____NO

6) What year did you graduate high school? _________

7) If you had to guess, what will your GPA be for this semester? _______

8) What is your major? If you have yet to decide, what do you think your major will be? 
   ____________________________

9) How many semesters have you been at this University?
   a) This is my 1st semester
   b) This is my 2nd semester
   c) This is my 3rd semester
   d) This is my 4th semester
   e) This is my 5th semester
   f) This is my 6th semester
   g) This is my 7th semester
   h) This is my 8th semester
   i) This is my 9th semester
   j) This is my 10th semester
   k) This is my 11th semester
Different people have different concerns. For each of the following, please list how much you think *other people (your own age)* worry about each. Other people refers to people of a similar age to yourself.

How much do other people worry about parental/family relations?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Very Much</th>
</tr>
</thead>
</table>

How much do other people worry about academics?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Very Much</th>
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</thead>
</table>

How much do other people worry about peer relationships/companionship?

<table>
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<tr>
<th>Not at all</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Very Much</th>
</tr>
</thead>
</table>

How much do other people worry about finances?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Very Much</th>
</tr>
</thead>
</table>

How much do other people worry about their career?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Very Much</th>
</tr>
</thead>
</table>

How much do other people worry about romantic relationships/companionship?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Very Much</th>
</tr>
</thead>
</table>

Please rank each of the following such that whatever other thing *other people (your own age)* worry about most = 1, worry about the second most = 2 …worry the least about = 6.

_____ parental/family relations

_____ academics

_____ peer relationships

_____ finances

_____ career

_____ romantic relationships
Book Flyer

The following describes a new set of books made specifically for the college student. Please read each one carefully. You will be asked about these different volumes later. Please think about which volume(s) are of greatest and of least interest to you.

Volume 1: College Life and Romantic Relationships – COST = $19.99

This 190 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from over 100 interviews with male and female college students. Learn: 1) how to meet the person perfect for you, 2) how to maintain long distance relationships, 3) how to end relationships that are not working. This is the 4th edition of this volume. This volume comes with a workbook and a CD version of the book. Free college t-shirt with your order! The College Book Club gave this volume a rating of 83.

Volume 2: College Life and Career – COST = $22.99

This 210 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from over 100 interviews with financial consultants. Learn: 1) the good and the bad of various careers, 2) about the careers that will be hiring when your graduate, 3) how much different careers will pay. This is the 2nd edition of this volume. This volume does not contain a workbook or CD version of the book. If you buy this volume, you can get another for half price. The College Book Club gave this volume a rating of 84.

Volume 3: College Life and Finances – COST = $20.99

This 230 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from focus groups conducted with 1,300 financial consultants. Learn: 1) find the best jobs for college students, 2) avoid credit card debt, 3) find scholarships and loans that fit your needs. This is the 5th edition of this volume. This volume comes with a workbook and a CD version of the book. You can get a free 30-day trial! The College Book Club gave this volume a rating of 81.
Volume 4: College Life and Peer Relationships/Companionship – COST = $21.99

This 180 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from focus groups conducted with 1,300 college students. Learn: 1) how to make friends that will last a lifetime, 2) how to keep old friendships while making new ones, 3) how to make sure you never spend a Saturday night without people to hang out with. This is the 7th edition of this volume. This volume does not contain a workbook or CD version of the book. If you buy this volume, you can get another volume for half price. The College Book Club gave this volume a rating of 86.

Volume 5: College Life and Academics – COST = $23.99

This 220 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from 1,100 surveys filled out by college professors. Learn: 1) how to study so you remember the material and perform better on tests, 2) how to communicate with your professors, 3) how to write the perfect term paper. This is the 3rd edition of this volume. This volume does not contain a workbook, but does come with a CD version of the book. You can get a free 30-day trial! The College Book Club gave this volume a rating of 85.

Volume 6: College Life and Parental/Family Relations – COST = $24.99

This 200 page volume will give you all the advice you need on this topic. The advice contained within this volume comes from over 1,000 interviews with college students and their families. Learn: 1) how to keep close with your parents during the college years, 2) help your parents understand your independence, 3) keep your parents from worrying. This is the 6th edition of this volume. This volume comes with a workbook and a CD version of the book. Free college t-shirt with your order! The College Book Club gave this volume a rating of 80.
FORM 2B
**Rank the Volumes**

Please think about the set of volumes you just read. Please rank the six volumes in order of which you feel is most relevant. If you could take one volume home for yourself, which one would you choose? Place a “1” next to the volume you are most interested; a “2” next to the second most...a “6” next to the one you are least interested in. Please only use each number, from 1 to 6, one time each.

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volume 1: College Life and <strong>Romantic Relationships</strong></td>
</tr>
<tr>
<td></td>
<td>Volume 2: College Life and <strong>Career</strong></td>
</tr>
<tr>
<td></td>
<td>Volume 3: College Life and <strong>Finances</strong></td>
</tr>
<tr>
<td></td>
<td>Volume 4: College Life and <strong>Peer Relationships/Companionship</strong></td>
</tr>
<tr>
<td></td>
<td>Volume 5: College Life and <strong>Academics</strong></td>
</tr>
<tr>
<td></td>
<td>Volume 6: College Life and <strong>Parental/Family Relations</strong></td>
</tr>
</tbody>
</table>
Next, please think about the volume that you marked as **most** relevant. If you cannot recall a specific piece of information please mark or write "DK".

Name of the volume______________________________

How much does this specific volume cost? ________

How many pages is the volume?_____________________

Is the advice presented within this volume based on:

- ______ focus groups, ______ interviews, ______ surveys, ______ do not recall

How many focus groups, interviews, or surveys is the advice based?___________

Who gave advice for the volume?__________________

What are the three topics that the volume will cover?

1)_____________________________________________________

2)_____________________________________________________

3)_____________________________________________________

What edition is the volume? ________________

Do you get a workbook with the volume? _____Yes _____No _____Do not recall

Do you get a CD with the volume? _____Yes _____No _____Do not recall

Does the volume come with (check as many as apply):

_____ Free 30-day trial  _____Free college t-shirt

_____ Another volume at half price  _____Do not recall

What rating did the book get from the College Book Club? __________
Next, please think about the volume that you marked as least relevant. If you cannot recall a specific piece of information please mark or write “DK”.

Name of the volume ____________________________________________

How much does this specific volume cost? __________

How many pages is the volume? _________________

Is the advice presented within this volume based on:

______ focus groups, ______ interviews, ______ surveys, ______ do not recall

How many focus groups, interviews, or surveys is the advice based? ________________

Who gave advice for the volume? ___________________________

What are the three topics that the volume will cover?

1) __________________________________________________________

2) __________________________________________________________

3) __________________________________________________________

What edition is the volume? _______________________

Do you get a workbook with the volume? _____ Yes _____ No _____ Do not recall

Do you get a CD with the volume? _____ Yes _____ No _____ Do not recall

Does the volume come with (check as many as apply):

______ Free 30-day trial  _______ Free college t-shirt

_____ Another volume at half price  ____ Do not recall

What rating did the book get from the College Book Club? ______________
1) This semester, my academic performance has been just about what I expected when the semester began.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

2) I think I need an academic tutor.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

3) I am afraid I will not be as academically successful as I hoped.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

4) I need to figure out how I can do better in my classes.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

5) I am confident in my ability to get the grades I want.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

6) I thought I would be able to get better grades than I am currently getting.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

7) This semester is far easier than I thought it would be.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

8) I am unhappy with my academic performance thus far.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

9) When it comes to my academic performance, I need to try harder.

   A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

10) I am happy with my current academic performance.

    A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree

11) I worry about my grades.

    A) Strongly Agree   B) Agree   C) Disagree   D) Strongly Disagree
Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling either:

0) Not at all
1) Mildly, but it didn’t bother me much
2) Moderately - it wasn’t pleasant at time
3) Severely - it bothered me a lot

1) Numbness or tingling: 0) Not at all 1) Mildly 2) Moderately 3) Severely
2) Feeling hot: 0) Not at all 1) Mildly 2) Moderately 3) Severely
3) Wobbliness in legs: 0) Not at all 1) Mildly 2) Moderately 3) Severely
4) Unable to relax: 0) Not at all 1) Mildly 2) Moderately 3) Severely
5) Fear of worst happening: 0) Not at all 1) Mildly 2) Moderately 3) Severely
6) Dizzy or lightheaded: 0) Not at all 1) Mildly 2) Moderately 3) Severely
7) Heart pounding/racing: 0) Not at all 1) Mildly 2) Moderately 3) Severely
8) Unsteady: 0) Not at all 1) Mildly 2) Moderately 3) Severely
9) Terrified or afraid: 0) Not at all 1) Mildly 2) Moderately 3) Severely
10) Nervous: 0) Not at all 1) Mildly 2) Moderately 3) Severely
11) Feeling of choking: 0) Not at all 1) Mildly 2) Moderately 3) Severely
12) Hands trembling: 0) Not at all 1) Mildly 2) Moderately 3) Severely
13) Shaky/unsteady: 0) Not at all 1) Mildly 2) Moderately 3) Severely
14) Fear of losing control: 0) Not at all 1) Mildly 2) Moderately 3) Severely
15) Difficulty in breathing: 0) Not at all 1) Mildly 2) Moderately 3) Severely
16) Fear of dying: 0) Not at all 1) Mildly 2) Moderately 3) Severely
17) Scared: 0) Not at all 1) Mildly 2) Moderately 3) Severely
18) Indigestion: 0) Not at all 1) Mildly 2) Moderately 3) Severely
19) Faint/lightheaded: 0) Not at all 1) Mildly 2) Moderately 3) Severely
20) Face flushed: 0) Not at all 1) Mildly 2) Moderately 3) Severely
21) Hot/cold sweats: 0) Not at all 1) Mildly 2) Moderately 3) Severely
1. On the whole I am satisfied with myself
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
2. At times I think I am no good at all
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
3. I feel that I have a good number of qualities.
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
4. I am able to do things as well as most other people.
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
5. I feel I do not have much to be proud of.
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
6. I certainly feel useless at times.
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
7. I feel that I am a person of worth, at least on an equal plane with others.
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
8. I wish I could have more respect for myself.
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
9. All in all, I am inclined to feel that I am a failure.
   a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
10. I take a positive attitude toward myself.
    a) Strongly Agree  b) Agree  c) Disagree  d) Strongly Disagree
1. Does your opinion of yourself tend to change a good deal, or does it always continue to remain the same?
   
   a) Changes a great deal   b) Changes somewhat
   c) Changes very little   d) Does not change at all

2. Do you ever find that on one day you have one opinion of yourself and on another day you have a different opinion of yourself?
   
   a) Yes, this happens often   b) Yes, this happens sometimes
   c) Yes, this rarely happens   d) No, this never happens

3. I have noticed that ideas about myself seem to change very quickly
   
   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree

4. Some days I have a very good opinion of myself; other days I have a very poor opinion of myself.
   
   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree

5. I feel that nothing, or almost nothing, can change the opinion I currently hold of myself.
   
   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree

1. I frequently wish I could find my soul mate.
   
   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree

2. I rarely think about finding a desirable romantic situation.
   
   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree

3. I wonder if I will ever find the perfect romantic partner.
   
   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree

4. I frequently think about how my romantic relationship(s) can be improved.
   
   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree

5. I am happy with my current romantic relationship situation.
   
   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree
The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought in a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don’t try to count up the number of times you felt a particular way but rather indicate the alternative that seems like a reasonable estimate.

1. In the last month, how often have you been upset because of something that happened unexpectedly?
   0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

2. In the last month, how often have you felt that you were unable to control the important things in your life?
   0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

3. In the last month, how often have you felt nervous and “stressed”?
   0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

4. In the last month, how often have you dealt successfully with irritating life hassles?
   0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?
   0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

6. In the last month, how often have you felt confident about your ability to handle your personal problems?
   0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

7. In the last month, how often have you felt that things were going your way?
   0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

8. In the last month, how often have you found that you could not cope with all things that you had to do?
   0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often
9. In the last month, how often have you been able to control irritations in your life?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

10. In the last month, how often have you felt that you were on top of things?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

11. In the last month, how often have you been angered because of things that happened that were out of your control?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

12. In the last month, how often have you found yourself thinking about things that you have to accomplish?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

13. In the last month, how often have you been able to control the way you spend your time?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

0) Never  1) Almost Never  2) Sometimes  3) Fairly Often  4) Very Often

1. I frequently wish my finances would improve.

   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree

2. I rarely think about my finances.

   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree

3. I worry about my finances.

   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree
4. I frequently think about how I can improve my finances.
   
   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree

5. I am happy with my current finances.
   
   a) Strongly Agree   b) Agree   c) Disagree   d) Strongly Disagree
Different people have different concerns. For each of the following, please list how much you worry about each.

How much do you worry about parental/family relations?

| Not at all | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Very Much |

How much do you worry about academics?

| Not at all | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Very Much |

How much do you worry about peer relationships/companionship (friends)?

| Not at all | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Very Much |

How much do you worry about your finances?

| Not at all | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Very Much |

How much do you worry about your career?

| Not at all | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Very Much |

How much do you worry about romantic relationships/companionship?

| Not at all | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Very Much |

Please rank each of the following such that whatever you worry about most = 1, worry about the second most = 2 ...worry the least about = 6. Please only use each number, from 1 to 6, one time each.

_____ parental/family relations

_____ academics

_____ peer relationships

_____ finances

_____ careers

_____ romantic relationships
Directions: The statements that follow refer to feelings and experiences that occur to most people at one time or another in their relationships with their friends. For each statement there are four possible answers: strongly disagree (SD), disagree (D), agree (A), strongly agree (SA). Please circle the answer you choose for each item.

1. My friends give me the moral support I need.  SD D A SA

2. Most other people are closer to their friends than I am.  SD D A SA

3. My friends enjoy hearing about what I think.  SD D A SA

4. Certain friends come to me when they have problems or need advice.  SD D A SA

5. I rely on my friends for emotional support.  SD D A SA

6. If I felt that one or more of my friends were upset with me, I’d just keep it to myself.  SD D A SA

7. I feel that I am on the fringe in my circle of friends.  SD D A SA

8. There is a friend I could go to if I were feeling down, without feeling funny about it later.  SD D A SA

9. My friends and I are very open about what we think about things.  SD D A SA

10. My friends are sensitive to my personal needs.  SD D A SA

11. My friends come to me for emotional support.  SD D A SA

12. My friends are good at helping me solve problems.  SD D A SA

13. I have a deep sharing relationship with a number of friends.  SD D A SA

14. My friends get good ideas about how to do things or make things from me.  SD D A SA

15. When I confide in friends, it makes me feel uncomfortable.  SD D A SA

16. My friends seek me out for companionship.  SD D A SA

17. I think that my friends feel that I’m good at helping them solve problems.  SD D A SA

18. I don’t have a relationship with a friend that is as intimate as other people’s relationships with friends.  SD D A SA

19. I’ve recently gotten a good idea about how to do something from a friend.  SD D A SA

20. I wish my friends were much different.  SD D A SA
Directions: The statements that follow refer to feelings and experiences that occur to most people at one time or another in their relationships with their families. For each statement there are four possible answers: strongly disagree (SD), disagree (D), agree (A), strongly agree (SA). Please circle the answer you choose for each item.

SD D A SA 1. My family gives me the moral support I need.
SD D A SA 2. I get good ideas about how to do things or make things from my family.
SD D A SA 3. Most other people are closer to their family than I am.
SD D A SA 4. When I confide in members of my family who are closest to me, I get the idea that it makes them uncomfortable.
SD D A SA 5. My family enjoys hearing about what I think.
SD D A SA 6. Members of my family share my interests.
SD D A SA 7. Certain members of my family come to me when they have problems or need advice.
SD D A SA 8. I rely on my family for emotional support.
SD D A SA 9. There is a member of my family I could go to if I were feeling down, without feeling funny about it later.
SD D A SA 10. My family and I are very open about what we think about things.
SD D A SA 11. My family is very sensitive to my personal needs.
SD D A SA 12. Members of my family come to me for emotional support.
SD D A SA 13. Members of my family are good at helping me solve problems.
SD D A SA 14. I have a deep sharing relationship with a number of members of my family.
SD D A SA 15. Members of my family get good ideas about how to do things or make things from me.
SD D A SA 16. When I confide in members of my family, it makes me uncomfortable.
SD D A SA 17. Members of my family seek me out for companionship.
SD D A SA 18. I think that my family feels that I’m good at helping them solve problems.
SD D A SA 19. I don’t have a relationship with a member of my family that is as close as other people’s relationship’s with a family member.
SD D A SA 20. I wish my family were much different.
1) I wonder why people treat me the way they do.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

2) I wonder what people are thinking about me.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

3) I wonder what I can do to get people to like me more.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

4) I worry about other people talking about me.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

5) I imagine what other people are saying about me.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

6) I daydream what my future will hold.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

7) I wonder how people will respond when they hear about my life.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

9) I wonder how people would respond if something bad happens to me.
   a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always

10) When I overhear people talking, I wonder what they are talking about.
    a) Never  b) Almost never  c) Unsure  d) Almost Always  e) Always
Next, I'd like to ask you about any recent life events/changes you have experienced. Has anything negative, possibly unexpectedly, occurred that changed how you feel about yourself, your life, your relationships, or the world in general? Please describe one negative life change, event, or realization you believe is having the largest impact on your life and your feelings. In other words, what negative life change, event, or realization you experienced that has had the largest change on how you currently feel, behave, and/or see the world. This life change, event, or realization can be concerning yourself, relationships, college life, career, etc.

If there is more than one negative life change, event, or realization describe the ONE you believe has MOST impacted you, how you feel, and/or how you see the world. One way to think about which has had the greatest impact is to think about your thoughts over the past couple of weeks. What are these thoughts related to? Is there something you worry or stress about a lot, what are these thoughts related to? What has had the strongest negative impact on your current happiness level?

Please describe this change, event, or realization:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

**How has this impacted your life, thoughts, or how you feel about others?**

________________________________________________________________________

________________________________________________________________________

**How much do you worry/think about either this occurrence or things that occurred as a result?**

Not at all 0 1 2 3 4 5 6 A lot

**How much of an impact does this change, event, or realization currently have on you?**

Not at all 0 1 2 3 4 5 6 A lot
Next, I’d like you to think about the ONE THING you think would make your life perfect THIS YEAR! For example, “If only I knew what I wanted to do for a living, then my life would be perfect.” “If only I had better friends, then my life would be perfect.” “If only I had more money, then my life would be perfect.” “If only I could fall in love, then my life would be perfect.” “If only I could do better in school, then my life would be perfect.” “If only I could get along better with my parents, then my life would be perfect.”

Please tell me what you think would make your life perfect:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Why would this make your life perfect?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

1) How important is it for you to reach your “perfect world”?  
Not important 0 1 2 3 4 5 6 Very Important

2) How much is your future happiness dependent on you reaching your “perfect world”?  
Not Dependent 0 1 2 3 4 5 6 Very Dependent

3) How much time do you spend thinking about what it will be like to reach your “perfect world”?  
No Time 0 1 2 3 4 5 6 A lot of time

4) What impact would it have on your life if your “perfect world” became reality?  
No Impact 0 1 2 3 4 5 6 Large Impact

5) How much do you need to reach your perfect world?  
No Need 0 1 2 3 4 5 6 Large Need
Please imagine there is a pill that can give you your perfect world. Whatever you wrote about is the life you will get. However, this pill is not perfect. There is a chance that if you take the pill, instead of giving you your perfect world, will be responsible for an extreme amount of physical pain. The likelihood of the pill causing physical pain will vary. Please read the statement below and mark each one “yes” or “no”.

1) If there is a 100% chance you will get the remaining aspects of your perfect world, and a 0% chance the pill will cause extreme physical pain, will you take it?
   _____ YES  _____ NO

2) If there is a 90% chance you will get the remaining aspects of your perfect world, and a 10% chance the pill will cause extreme physical pain, will you take it?
   _____ YES  _____ NO

3) If there is an 80% chance you will get the remaining aspects of your perfect world, and a 20% chance the pill will cause extreme physical pain, will you take it?
   _____ YES  _____ NO

4) If there is a 70% chance you will get the remaining aspects of your perfect world, and a 30% chance the pill will cause extreme physical pain, will you take it?
   _____ YES  _____ NO

5) If there is a 60% chance you will get the remaining aspects of your perfect world, and a 40% chance the pill will cause extreme physical pain, will you take it?
   _____ YES  _____ NO

6) If there is a 50% chance you will get the remaining aspects of your perfect world, and a 50% chance the pill will cause extreme physical pain, will you take it?
   _____ YES  _____ NO

7) If there is a 40% chance you will get the remaining aspects of your perfect world, and a 60% chance the pill will cause extreme physical pain, will you take it?
   _____ YES  _____ NO

8) If there is a 30% chance you will get the remaining aspects of your perfect world, and a 70% chance the pill will cause extreme physical pain, will you take it?
   _____ YES  _____ NO

9) If there is a 20% chance you will get the remaining aspects of your perfect world, and a 80% chance the pill will cause extreme physical pain, will you take it?
   _____ YES  _____ NO

10) If there is a 10% chance you will get the remaining aspects of your perfect world, and a 90% chance the pill will cause extreme physical pain, will you take it?
    _____ YES  _____ NO
Perfect world and Negative life event: For both of these topics there are two questions. One asking about the respondent’s perfect world/negative life event and one focusing on how/why the perfect world/negative life event would impact or did impact the respondent. Sometimes a response will contain reference to more than one category. If this is the case, enter all the codes, starting with the most relevant category first. You should use the second question in each category to help you decide which code to use.

Please use the following number codes:

1: Parental/Family Relations: Anything that mentions the word family or family member should be coded as “1”; but, it may not be the first code. If it is a situation where a respondent writes that he or she has a boyfriend that is disliked by his or her family, this should be coded as “1” and then “6.” However, if someone writes that his or her uncle took the family’s money or owes the family money, this should be coded as a “4” then a “1.”

2: Academics: Anything that mentions grades should be coded as a “2”; but, it may not be the first code. If someone mentions that they want good grades as a tool for a career or good grades to make parents happy, then the first code should be “5” or “1” and then “2.” Graduate school should be considered career, not academics. If they mention the difficulty of college this is a “2.” If they mention the difficulty of college, but indicate it is due to trouble making friends, this should be considered a “3.”

3: Peer Relationships/Companionship: Anything that mentions friends (e.g. trouble making friends, betrayal, friends dying), should be coded as a “3”; but, it may not be the first code. If the issue is a friendship that has turned into a relationship, or a friendship that was ruined due to romance, this is a “6.” If the person mentions they can no longer partake in an activity that helped her make friends, this should be coded as “3.”

4: Finances: If the person mentions anything regarding money or bills it should be coded as “4”; but, this may not be the first code. If the person mentions becoming a movie star so they can be rich, this fall under both career and finances; but finances should be first. Tuition trouble should be considered financial trouble. If they mention needing to get a job, and they mention the need is due to money issues, this should be coded as finances.
5: **Career:** If the person mentions anything regarding career it should be coded as “4”; but, this may not be the first code. If someone says “I need to choose a major so I can figure out what to do with my life” this is coded as “5”. Basically, anything referring to “figuring out what to do with my life” is career. Graduate/Medical School is career. Any vocational training is a career. If a major is needed due to family pressure, this should be coded as a “1”. If they need to pick a major due to graduation looming or other time pressures, this should be coded as academics.

6: **Romantic Relationships/Sex:** If the person mentions anything regarding boyfriend/girlfriend, significant other, or sexual relations it should be coded as “6”; but, this may not be the first code. If someone wants a boyfriend/girlfriend this falls under “6.” “Coming out” in and of itself is “other”; if the issue is coming out to friends this is a “3.”

7: **Other**

Please assess which category will lead to the perfect world or is was the area where a negative life event occurred. The key is to focus on the outcome. Also, you can use more than one code for each. The first code should be the main code. The first code is the code you would pick if you could only choose one. The next should be considered auxiliary codes.
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