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Gender Differences in Internal and External Focusing Among Adolescents

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Of growing interest is the finding that in response to depressed mood, there are gender differences in cognition. Prior research has suggested that in response to depressed mood, females engage in more ruminative thoughts while males respond by engaging in thoughts designed to distract themselves. The following research report examines whether these gender differences in cognition exist even when males and females are not depressed. In this study, freely generated thought samples were obtained from an ethnically diverse, adolescent subject population. Findings from a content analysis of these thought samples showed that females' thought samples tend to be more internally focused and relation focused than males'. Males, by contrast, tend to be more externally focused than females. These gender differences were observed among African-American, Asian-American, Caucasian, and Hispanic subjects.

While there is a growing body of research devoted to understanding the way gender differences in cognition are related to gender differences in depression, rarely has research attended to the question of whether the cognitions of males and females differ even in the absence of depressed mood. In explaining why women are twice as likely to become depressed as men (Boyd & Weissman, 1981; Weissman & Klerman, 1977), psychologists began researching gender differences in cognitive response styles to

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depressed mood (Ingram, 1990; Nolen-Hoeksema, 1987). Empirical findings have suggested that when depressed, women respond by internally focusing, ruminating about themselves and their problems, while men tend to externally focus, distracting themselves by thinking about and engaging in other activities such as sports (Butler & Nolen-Hoeksema, 1994; Ingram, Cruet, Johnson, & Winsnicki, 1988). These gender differences in cognitive response are theorized to account for at least some of the gender differences in depression, in that the ruminative coping style exhibited among women has been shown to heighten their depressed mood while the distracting coping style exhibited among men tends to dampen their depressed mood, hence protecting them from becoming clinically depressed (Morrow & Nolen-Hoeksema, 1990; Nolen-Hoeksema & Morrow, 1991, 1993; Nolen-Hoeksema, Morrow, & Fredrickson, 1993). This research report concerns itself with the question of whether the cognitive differences that distinguish depressed men and women are also present among generally happy men and women.

Just as there are differences among depressed males and females, there also may be a difference in thinking styles among nondepressed males and females. Some prior research suggests that the gender differences in cognition exhibited among depressed men and women may also be prevalent among nondepressed men and women. Findings from one study showed that even when nondepressed men and women are confronted by self-focusing (mirror) or external (television) stimuli, women were more likely to self-focus than were men (Ingram et al., 1988). Results from a second study show that regardless of whether women are in a sad or neutral mood, they prefer to engage in an emotion-focused task (Butler & Nolen-Hoeksema, 1994). In this study, subjects were given the option of engaging in an emotion-focused task (ranking emotion related items) or engaging in a nonemotion-focused task (ranking nonemotion-related items). Results illustrated that in both a sad mood condition and a neutral mood condition women prefer the more emotion-focused task more so than men.

Several limitations within the two studies cited above (Butler & Nolen-Hoeksema, 1994; Ingram et al., 1988) make it difficult to assess accurately whether gender differences in cognitive response among depressed men and women also exist among nondepressed men and women. First, it is difficult to ascertain whether the women who stared at themselves in the mirror or ranked emotion-related items were actually engaging in internal focusing. Additionally, it is unclear whether these gender differences in behavior actually reflect gender differences in thought patterns.

Therefore, unlike these prior studies, this research report endeavors to compare the actual thinking patterns of men and women in a neutral mood to those who are in a negative mood. Based upon prior research,

we predicted that the gender differences in thinking styles observed among depressed males and females might also exist among nondepressed males and females. In this study, we tested the hypothesis that females engage in internal focusing and males engage in external focusing regardless of whether they are in a negative or non-negative mood. In an effort to work with a population that does not exhibit gender differences in depression, but still at the same time might reflect the same sort of thought patterns as adult men and women, we chose to work with 13-year-old boys and girls—the age at which gender differences in depression have not yet emerged (Allgood-Merten & Lewinsohn, 1990; Compas & Grant, 1993; Compas, Malcarne, & Fondacaro, 1988; Rutter, 1986). Working with such an age group enabled us to examine whether gender differences in thought patterns exist even before gender differences in depression emerge.

In this experiment nondepressed 13-year-old boys and girls were either placed in a difficult task condition (designed to dampen mood) or were placed in an easy task condition (designed to engender a positive or neutral mood). Afterward, subjects were given several writing tasks in which there were very few restrictions. In these writing tasks, subjects generated thought samples in which they expressed their spontaneous thoughts as they occurred. The content of these freely generated thought samples was analyzed for gender differences. We predicted that an analysis of the content within these thought samples would reveal that girls would be more internally focused and, conversely, that boys would be more externally focused, regardless of whether they were in the condition meant to generate negative affect (difficult condition), or the condition meant to generate neutral or positive affect (easy condition).

METHOD

Subjects

Eighth graders, approximately 13 years of age, from a local middle school in Mountain View, California, participated in a 30 min experiment. All 110 eighth graders at this school were recruited to participate in an experiment taking place after school, with the incentive of financial compensation. Seventy percent of the students agreed to be participants making a subject sample of 77. Of the 77 participants, there were 32 males and 45 females. The ethnic distribution of the subject population included 36% Caucasian, 27% Hispanic, 23% Asian-American, 9% African-American, and 8% other ethnicities. We acquired parental and student permission before admitting any participants into the experiment.

Materials

A Multi-Affect Adjective Check List (MAACL; Zuckerman & Lubin, 1965; Lubin, Zuckerman, & Woodward 1985) was completed by all participants; this scale lists 132 adjective words arranged in alphabetical order. Since we were only interested in mood ratings for depression and anxiety, only those adjectives relating to these two measures were drawn for use in this study. This shortened version of the MAACL, which included 39 adjectives related to depression and 20 adjectives related to anxiety, was administered both at the beginning and at the conclusion of the experiment.

During the experiment, 20 cyclical graphs were distributed to each participant. Cyclical graphs are sets of connected lines that can be traced by following two rules: not lifting the pen from the figure and not tracing over the same line twice. Participants were randomly assigned to either the easy condition, in which they received simple, easily solved cyclical graphs, or they were assigned to the difficult condition in which they received very complex, nearly unsolvable graph tasks. We theorized that the difficult cyclical graph condition would dampen participants' mood, while those completing the easy cyclical graphs would experience either positive or neutral moods.

Procedure

During the experiment, we randomly assigned the participants into four groups of 19 or 20, each of which were mixed gender groups, and placed them in four separate classrooms. After being seated, we told the participants that this experiment tests the development of problem-solving skills: "We are looking at how well you do at solving puzzles." Additionally, we told the participants: "Periodically, throughout this experiment, we will ask you to complete a questionnaire which lists several adjectives, and your job will be to check off the ones which most apply to you at the moment." After receiving these instructions, all participants completed the MAACL, which served as our baseline mood measure.

Next, we asked participants to solve the cyclical graphs. Before participants began this task, we gave them the following instructions: "Your job is to trace a line over all of the lines in the cyclical graph with one stroke. No lines can be repeated, and you have to do it without lifting your pencil from the page." In the front of the classroom, a 24" × 36" poster displayed a sample cyclical graph and its solution. The experimenters went through the motions, demonstrating the way in which the solution was derived. During this demonstration period, participants had the opportunity to ask questions.

We gave each participant 20 cyclical graphs to solve and allotted them 30 sec to complete each puzzle. After completing each cyclical graph, participants turned to the next page. Participants could not return to any cyclical graph after the 30 sec period had elapsed. We used stop watches for timing the 30 sec periods. While this time frame was ample for those completing the simple tasks, it was not nearly sufficient for those solving the difficult ones. This stage of the experiment lasted approximately 15 min.

The third stage of the experiment, which measured thought patterns, included three tasks. In the first, the Free Association Task, we told participants that the next phase examined the way in which people think. We asked participants to "jot down everything which comes to mind for five minutes." We told participants not to concern themselves with writing style or coherence. Upon completion of the Free Association Task, we told participants to write their feelings and thoughts concerning the puzzles they had previously completed: "How do you feel about the puzzles you just did?" This task was denoted as being the Puzzle-Related Task. We gave them 3 min to complete this task.

Next, participants completed the Self-Related Task. In this task, we told participants to write about the way they were feeling about themselves: "How do you feel about yourself?" They had 3 min to complete this task.

At the conclusion of the experiment, participants once again completed the MAACL and were then debriefed about the nature of the experiment.

Scoring

Raters. Two raters independently evaluated each of the three writing samples from the Free Association Task, Puzzle-related Task, and Self-related Task. These raters were ignorant of the condition and gender of each participant and the hypotheses of the experiment.

Initially, raters calculated the total number of thought units contained within the written material of each participant for each of the three tasks. A thought unit is a simple sentence, independent clause, or a clearly separate fragment or phrase from which inferences can be derived. A count of thought units rather than sentences was preferred since within the spontaneous free-flowing writing samples of adolescents, punctuation was not an indicator of sentence boundaries. The interrater alpha level for the number of thought units generated for the Free Association Task, Puzzle-Related Task, and Self-related Task was $\alpha = .99$ (alpha was the same for all three tasks).

Within the Free Association Task, the thought units were classified into nine different categories, while in both the Puzzle-Related Task and in the Self-related Task there were four categories. A description of each of the categories for each task is given in detail below. There was no overlap

among these categories; if a thought unit was placed in one category, it was not placed in any other. Those thought units from which inferences were not easily derived remained uncoded. For every subject, the number of thought units for each category was summed and then divided by the participant's total number of thought units. Through this method, the counts for each category were transformed into percentages, thus allowing for a normally distributed data sample upon which multivariate and univariate analysis could be conducted.

Free Association Task. The Free Association Task was coded on nine different categories. The first three categories dealt with internal focusing. These categories included statements that focused upon attributes of the self. These thought units expressed how the person was feeling, self-evaluations, intimate self-disclosures, references to self-performance in any test or social situation, or references to any physical or personality traits. All of these statements included "I" or "me." Statements within these categories were broken down into positive (e.g., I am happy), negative (e.g., I don't really like myself) and neutral (e.g., I was looking out the window).

The next three categories, those of relation focusing, were comprised of references that participants made in regard to their interpersonal relations with their friends and family. The relation-focused thoughts were classified as positive (e.g., falling in love), negative (e.g., mad at a majority of my friends), or neutral (e.g., I wonder if Mom's home).

The last three categories, those of external focusing, consisted of expressions that were external to the self. These were nonself-focused thoughts in which attention was directed at external stimuli. Since these categories measured noninternally focused thoughts, external expressions did not include any self referent words such as "I" or "me." Externally focused statements were also classified as being positive (e.g., it's a beautiful day), negative (e.g., this room really smells), or neutral (e.g., the pencil is white). It should be noted all references to music, sports groups, and television programming were categorized as externally positive.

The interrater average alpha level for the nine categories within the Free Association Task was $\alpha = .97$ (range: .94–.99).

Puzzle-related Task. The Puzzle-Related Task, in which participants expressed their opinions regarding the cyclical graphs, was coded on four dimensions. The first two categories, which served as a manipulation check, measured the extent to which subjects regarded the task as a positive or negative experience. We coded for the number of positive statements concerning the cyclical graphs (e.g., those puzzles were a lot of fun), as well as the number of negative statements for this task (e.g., they were really stupid).

The next two categories measured the extent to which subjects attributed their positive or negative experience with the cyclical graphs to internal attributes. Internal attributions were expressions in which subjects attributed their performance on the puzzles to personal dispositions. We coded for statements that expressed internal positive attributions (e.g., I do really well at puzzles) and internal negative attributions (e.g., I am terrible at puzzles).

The interrater average alpha level for the four categories within the Puzzle-Related Task was a = .96 (range: .95–.97).

Directed Self-Focusing. Like the Free Association Task, the Self-Related Task measured the extent to which subjects were internally focused. Unlike the Free Association Task, in this task subjects were specifically asked to express thoughts concerning themselves. Within this task, we coded for internal-positive, internal-negative, and internal-neutral thoughts (for definitions refer to the Free Association Task). In order to account for statements that expressed nonself-related thoughts, a fourth category, external thoughts, was coded as well.

The interrater average alpha level for the four categories within the Self-Related Task was α = .97 (range: .94–.98).

RESULTS

Preliminary Analysis

Baseline mood ratings from the MAACL suggested that 1 of the 77 participants to be an outlier, having a particularly high depression score (35 out of 39) along with a particularly high anxiety score (17 out of 20). For this reason this participant was removed from all further analyses.

Performance. Performance scores on the cyclical graph tasks confirmed the manipulation of the easy and difficult conditions. A 2 (gender) × 2 (condition) analysis of variance showed that those within the easy condition (M = 17.12, SD = .45) obtained higher scores on the cyclical graph tasks than those within the difficult condition (M = 2.45, SD = .45; [$F(1,74)$ = 53.72, $p < .0001$]). Since each subject completed 20 cyclical graphs, the maximum performance score that could be obtained was 20, while the minimum score that could be obtained was 0. There were no significant differences between boys and girls in performance.

Activity Related Attributions. As expected, results from the Puzzle-Related Task suggest that those participants in the easy condition preferred the cyclical graph tasks much more so than those in the difficult condition. The four categories of the Puzzle-Related Task were analyzed within a 2 (gender) × 2 (condition) multivariate analysis of variance that indicated an

overall effect for condition, [$F(4,70) = 2.40$, $p < .05$]. Univariate tests showed that those within the easy condition ($M = 57\%$, $SD = 3\%$) made significantly more positive statements regarding the puzzles than did those within the difficult condition [$M = 3\%$, $SD = 4\%$; $F(1,74) = 9.93$, $p < .002$]. Additionally, those within the difficult condition ($M = 65\%$, $SD = 2\%$) made significantly more negative statements regarding the puzzles than did those within the easy condition [$M = 10\%$, $SD = 4\%$; $F(1,74) = 29.36$, $p < .0001$]. Within the multivariate analysis there were no gender or interaction effects.

Performance Related Attributions. The number of positive and negative statements generated regarding one's ability to do cyclical graphs did not vary by gender nor by condition, suggesting that how well one performed on the anagram task was not perceived as reflecting one's innate ability. Such mixed evidence for gender differences in performance-related attributions and behaviors has been found in several prior studies as well (Frieze, Fisher, Hanusa, McHugh, & Valle, 1978; Parsons, 1983). In this case, the lack of gender differences in ability attributions may be explained by the fact that at no time did the experimenter provide evaluative feedback, perhaps leading the subjects to perceive the task as being unimportant (Dweck & Gilliard, 1975; Roberts & Nolen-Hoeksema, 1989).

Mood Ratings. Although participants within the difficult condition seemed to enjoy the cyclical graphs less and generally performed worse on this activity than those in the easy condition, these differences were not reflected in differences in mood. As expected, 2 (gender) × 2 (condition) analyses of variance on the baseline measures of both depressed mood and anxious mood revealed no significant differences by gender or condition; the average baseline depressed mood mean was 11.93 ($SD = 6.53$) and average anxious mood was 7.95 ($SD = 2.86$). However, mood ratings obtained subsequent to participating in the cyclical graph tasks also suggest no significant differences by gender or by condition. Subsequent depressed mood ratings ($M = 13.72$, $SD = 6.65$) and anxious mood ratings ($M = 8.65$, $SD = 3.26$) proved not to be significantly different from their baseline counterparts.

Experimental Treatments. We observed no differences in Free Association thoughts by condition, nor did we observe any interactions between gender and condition within the thought samples generated by our participants. We therefore collapsed the data across both experimental treatments.

Preferred Topics of Focus

Spontaneous Thought Patterns. When boys and girls were given the seemingly neutral task of spontaneously writing about, and presumably

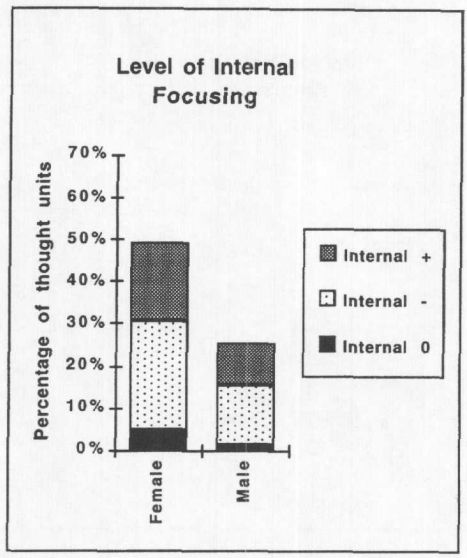

Fig. 1. Percentages were derived by taking the number of thought units within a particular category over the total number of thought units. The alpha used was $p = .05$. A (+) sign = positive, (–) sign = negative, and (0) = neutral.

thinking about, whatever they want, striking gender differences in preferred thought patterns emerge. Girls chose to generate thoughts focused on themselves and on the people they know, while the boys' thoughts focused on sports, music, television programming, etc. A multivariate analysis of variance on the nine categories of the Free Association Task revealed a main effect for gender [$F(9,65) = 5.45, p < .0001$]. As depicted in Fig. 1, girls allocated more internally focused thoughts than did boys, and these gender differences were consistent for the three categories of internal positive thoughts [$F(1,74) = 4.37, p < .04$], internal negative thoughts [$F(1,74) = 8.26, p < .005$], and internal neutral thoughts [$F(1,74) = 5.5, p < .017$]. Additionally, as depicted in Fig. 2, more of the girls' thoughts were allocated to relation focusing than boys, generating more relational positive thoughts [$F(1,74) = 6.63, p < .01$] and relational negative thoughts [$F(1,74) = 4.50, p < .04$], although there were no gender differences in the number of relational neutral thoughts [$F(1,74) = 1.89, ns$]. By contrast, as depicted in Figure 3, the boys allocated considerably more of their thoughts to external focusing. Specifically, more of the boys' thoughts were externally positive [$F(1,74) = 22.25, p < .0001$] than girls, while the number of ex-

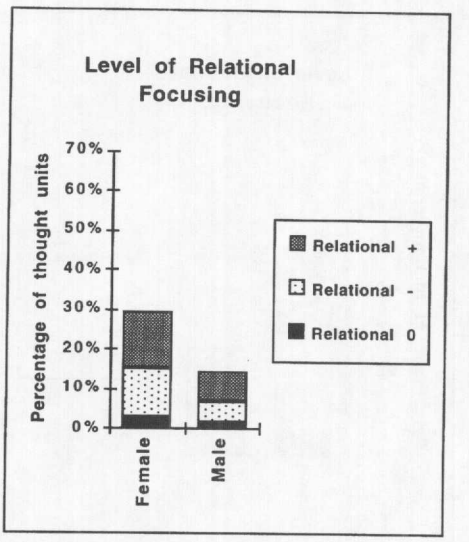

Fig. 2. Percentages were derived by taking the number of thought units within a particular category over the total number of thought units. The alpha used was $p = .05$. A (+) sign = positive, (–) sign = negative, and (0) = neutral.

ternal negative thoughts [$F(1,74) = 1.27$, *ns*] and external neutral thoughts [$F(1,74) = .600$, *ns*] did not vary.

Directed Self-Focusing. Even when directly asked to think about themselves within the Self-Related Task, the striking gender difference in the desire to internally focus remained. Results from the Self-Related Task are consistent with the overall pattern observed in the Free Association Task. A multivariate analysis of variance on the four dimensions of the Self-Related Task revealed a main effect for gender [$F(4,70) = 7.77$, $p < .0001$]. Results provided in Fig. 4 show that girls generated considerably more internally focused thoughts [$F(1,74) = 16.33$, $p < .0001$] than boys. This gender difference held true across all three categories of internal focusing. Conversely, boys generated significantly more externally focused thoughts [$F(1,74) = 3.83$, $p < .05$], suggesting that even when asked to think about themselves, boys still opt to focus on more external stimuli.

DISCUSSION

Findings from this study are striking. Self-generated thought samples of 13-year-olds suggest that boys and girls tend to think about very different

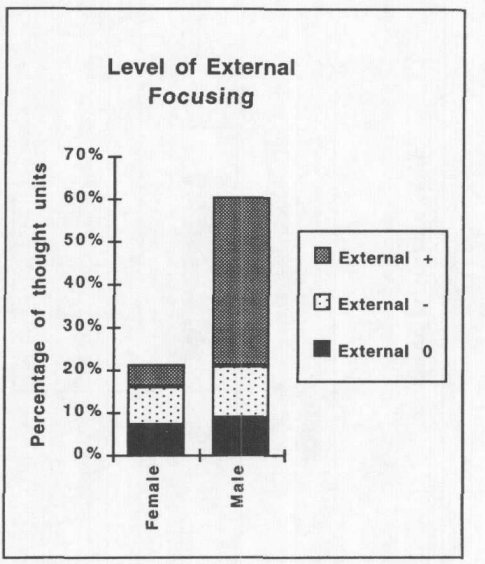

Fig. 3. Percentages were derived by taking the number of thought units within a particular category over the total number of thought units. The alpha used was $p = .05$. A (+) sign = positive, (–) sign = negative, and (0) = neutral.

things. Reflected in the girls' thought samples was an emphasis on being internally and relationally focused; in other words, girls devoted more of their thoughts to thinking about themselves and the people they know. Boys, in contrast, displayed a tendency toward external focusing, thinking about everything else such as sports, music, food, etc. Interestingly, regardless of whether the female participants had encountered a frustrating task or a satisfying task, their thought samples contained internal positive, negative, and neutral thoughts, suggesting that they do not just ruminate only in a negative mood. Boys, by contrast, not only expressed external thoughts following the satisfying task, but preferred engaging in positive thoughts regardless of the condition they were in. Even when asked to talk about themselves within the Self-Related Task, boys generated considerably more external thoughts and considerably fewer internal thoughts than did the girls.

A limitation in this study is that, contrary to prior expectations, we were not able to compare the thought samples of participants with a depressed mood to those within a nondepressed mood. Although participants who engaged in the difficult cyclical graph tasks found the activity to be less pleasant, their displeasure was not subsequently reflected in a change in mood. As a consequence, regardless of the condition assignment, all par-

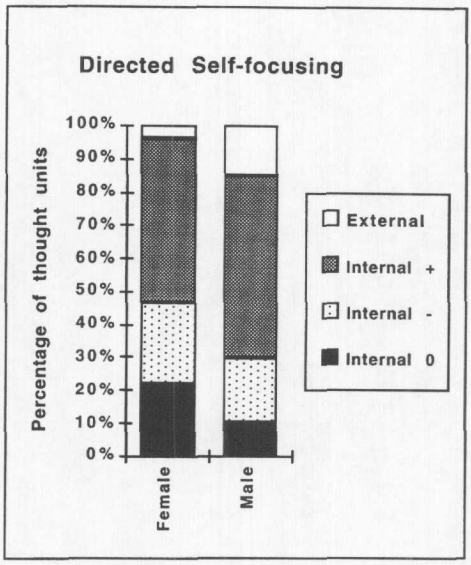

Fig. 4. Percentages were derived by taking the number of thought units within a particular category over the total number of thought units. The alpha used was $p = .05$. A (+) sign = positive, (–) sign = negative, and (0) = neutral.

ticipants appeared to have been in a nondepressed, relatively happy mood. In light of prior research, it is not unusual that the task manipulation did not succeed in inducing a change in mood (Parsons, 1983). Perhaps the lack of mood change may be explained by the fact that at no time did the experimenter provide evaluative feedback, which might have led the subjects to perceive the task as being unimportant (Dweck & Gilliard, 1975; Roberts & Nolen-Hoeksema, 1989).

Despite the fact that these data do not provide a forum in which the thought samples of depressed males and females can be compared to the thought samples of nondepressed males and females, the findings from this study nonetheless, are of theoretical relevance. To begin with, the findings from this study provide for the first time a delineation of the kinds of thoughts given emphasis among adolescent boys and girls. Specifically, our coding scheme extends prior research by not only providing evidence confirming females' tendency toward internal focusing and males' tendency toward external focusing, but it additionally allows for an analysis of the types of thoughts generated as either positive, negative, or neutral.

Of further theoretical relevance is the finding that the very same gender differences in cognition related to gender differences in depression also appear to be present among nondepressed males and females. Specifically, what is of interest is that a similar thought pattern among depressed females also seems to exist among nondepressed females, and this pattern seems to be present by early adolescence. By itself, being internally and relationally focused are harmless, perhaps even instrumental, in that the very factors that lead females to focus internally and relationally may also lead them to possess such well-regarded characteristics as the ability to empathize (Markus & Kitayama, 1991). But, this tendency to focus internally and relationally when manifested during depressed moods may well serve to exacerbate those moods (Lyubomirsky & Nolen-Hoeksema, 1993; Nolen-Hoeksema, 1991, 1994; Nolen-Hoeksema & Morrow, 1993). Nolen-Hoeksema and Girgus (1994) argued that it is only among girls who have a ruminative style of coping before adolescence and encounter significant negative life circumstances during adolescence that we will see a rise in depression. In contrast, these findings suggest that from early adolescence, boys develop a tendency toward distracting themselves from internal focusing. This tendency toward external focusing may be linked to the distracting behaviors in which men engage in response to sad moods; this in turn may make them less vulnerable to depression. One wonders, then, whether these gender differences in cognition present among adolescent boys and girls are in any way related to the gender differences in cognitive responses found among adult men and women experiencing depressed mood.

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