

USING THE IMAGINARY AUDIENCE SCALE AS A MEASURE OF SOCIAL ANXIETY IN YOUNG ADULTS

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Two studies explored the utility and meaning of the imaginary audience phenomenon among college students. Study 1 examined the psychometric properties of the Imaginary Audience Scale used for college student samples. The second study correlated imaginary audience scores with a global measure of personality and also compared the accuracy of self measures, social anxiety measures, and a measure of formal reasoning to predict imaginary audience scores. Results indicated that Imaginary Audience Scale scores met conventional standards of validity and reliability in these samples of postadolescent individuals. As expected, imaginary audience behavior was related to measures of social anxiety, the self, and personality. Furthermore, imaginary audience scores were more strongly related to these measures than to an index of formal reasoning. These results suggest that imaginary audience experiences that persist into late adolescence and early adulthood may have more to do with social anxiety than with cognitive development.

The Imaginary Audience in Young Adults

Considerable research on adolescent egocentrism has focused on the imaginary audience phenomenon. The imaginary audience, first described by Elkind (1967), refers to a projected audience that focuses on the behavior

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and personal characteristics of an individual. Elkind proposed that imaginary audience concerns are provoked by two types of self-consciousness: the "abiding self," which stems from excessive concerns about permanent aspects of the self, such as personality or intelligence, and the "transient self," which reflects anxiety about temporary aspects of the self, such as a bad haircut.

Perception of the imaginary audience is characterized by an exaggerated concern with the view of others and appears to be experienced most commonly by adolescents (Elkind & Bowen, 1979; Kissel, 1975; Simmons, Rosenberg, & Rosenberg, 1973). The concept derives from Piaget's (1969) theoretical expectation that adolescents will manifest relatively greater self-consciousness than either younger children or adults due to the egocentrism coincident with formal operational thinking. According to this perspective, a curvilinear relationship would be expected between the imaginary audience experience and cognitive development, whereby perception of the imaginary audience should increase until attainment of formal operational thought (adolescence) and then decline as the individual reaches adulthood. This argument provided an exciting conceptual link between cognition and personality in that the development of formal operational thought ought to heighten self-consciousness. Unfortunately, there has been little evidence to support it.

Research examining the etiology of the imaginary audience phenomenon has yielded mixed results. For example, some research has found that, consistent with Piaget's (1969) theory, sensitivity to the existence of an imaginary audience increases with the recent attainment of formal operations (Elkind, 1967) and that the abiding self peaks during the transition from concrete to formal operations (Gray & Hudson, 1984). In contrast, however, Pesce and Harding (1986) reported that concrete-level participants scored higher than formal-operational participants on the Imaginary Audience Scale (Elkind & Bowen, 1979). Enright, Shukla, and Lapsley (1980) found that although the imaginary audience generally declined during adolescent years, adolescent egocentrism was not linear: Different components (self-focus, etc.) seemed to emerge at different times. Furthermore, individuals possessing insecure relationships with their parents did not manifest the expected decline in imaginary audience scores (Ryan & Kuczkowski, 1994). Frankenberger (2000) found imaginary audience ideations to be comparable for adolescents and young adults (aged 19-30 years). Thus, there is evidence that the imaginary audience does not necessarily diminish with age following adolescence but instead may remain salient into adulthood, at least for some individuals.

Some evidence exists to support the idea that there is, in fact, no meaningful relationship between sensitivity to the imaginary audience and cognitive development. Peterson (1982), for example, concluded that the imaginary audience is not confined to adolescence or associated with formal operational

thought. Likewise, sex differences in susceptibility to the imaginary audience (Gray & Hudson, 1984; Ryan & Kuczowski, 1994; Rycek, Stuhr, McDermott, Benker, & Swartz, 1998) raise doubts that adolescent egocentrism arises from formal operational thought because Piaget's (1969) cognitive developmental stages should be independent of gender (Enright et al., 1980).

Because research examining the relationship between cognitive development and susceptibility to the imaginary audience has tended to yield equivocal results, some investigators have explored alternative explanations for the emergence of the imaginary audience (see Vartanian, 2000, for a more complete review). For example, Simmons et al. (1973) suggested that changes in the social context of adolescents' lives (e.g., shift from grade school to high school) result in a major disturbance in self-image and that the imaginary audience phenomenon arises from this self-image disturbance rather than the onset of formal operational thinking. Lapsley and Murphy (1985) proposed a social-cognitive theoretical framework that conceptualizes the imaginary audience in terms of difficulties in social perspective taking (Selman, 1980). However, this approach has not received empirical support (Jahnke & Blanchard-Fields, 1993; Vartanian & Powlishta, 1996). More recently, a "new look" model has been offered that considers the imaginary audience phenomenon within the context of personal identity (Lapsley, 1993). According to this perspective, susceptibility to an imaginary audience is an expected consequence of the adolescent's psychological individuation and maturation. Establishing a sense of self separate from one's family involves fantasizing about the self in various interpersonal situations. Indeed, imaginary audience ideation has been found to correlate positively with interpersonal concerns that emphasize a need for social connectedness (Vartanian, 1997).

Moreover, it may be that the imaginary audience is not limited to adolescent or preadolescent experience. Evidence for this notion can be seen in extensive findings regarding the relevance of self-conscious processes in the maintenance of the self well into adulthood (Fenigstein, Scheier, & Buss, 1975; Jones, Cheek, & Briggs, 1986; Miller, Murphy, & Buss, 1981). In this regard, Baldwin and Holmes (1987) found that the presumed status of persons in an imaginary audience affected both how adult subjects responded to a sexually permissive passage and how evaluated they felt by the imaginary audience. Specifically, subjects' behavior was consistent with the values held by audiences they were instructed to imagine (e.g., college friends or older members of their family). Furthermore, Weary et al. (1982) found that adult participants showed self-serving biases only when their attributions were made in private. Thus, it may be that the imaginary audience phenomenon contributes to the experience of shyness, social anxiety, propensity for embarrassment, heightened conformity, and related experiences.

As this brief review suggests, a number of issues exist regarding the mechanisms involved in the development of the imaginary audience phenomenon. Of particular interest is the fact that previous research has emphasized the measurement of an individual's sensitivity to an imaginary audience to examine self-consciousness and public individuation among adolescent populations (Elkind & Bowen, 1979; Ryan & Kuczkowski, 1994). However, perceptions of the imaginary audience among older samples have not been extensively explored. The focus of the present research was to address these concerns, and its purposes were as follows: (a) to assess the validity and reliability of scores on the Imaginary Audience Scale as modified for use among college students, (b) to investigate the salience of the imaginary audience in young adults, and (c) to provide empirical evidence regarding the relative contributions of two phenomena that may coincide with imaginary audience sensitivity: cognitive development and social anxiety.

Study 1: Validity and Reliability of the Imaginary Audience Scale Scores

Method

PARTICIPANTS

Participants were two samples of undergraduate college students enrolled in general psychology courses at a large university who volunteered to complete questionnaires in exchange for nominal course credit. Because the purpose of the study was to examine the operating characteristics of the Imaginary Audience Scale in young adults rather than adolescents, particular effort was made to recruit advanced students. Sample 1 provided responses for psychometric analyses and consisted of 74 men and 133 women ranging in age from 17 to 50 years ($M = 24$ years). The sample was primarily Caucasian (144 participants) and also included 23 Asian American, 13 African American, and 19 Hispanic participants (13 individuals did not indicate their ethnicity). Participants were distributed across college classes as follows: 20% freshmen, 20% sophomores, 40% juniors, and 20% seniors. The respondents in Sample 2, whose data were used for validity analyses, were 38 men and 63 women ranging in age from 18 to 48 years ($M = 24$ years). A majority of the sample was Caucasian (74 participants) and also included 13 Asian American, 7 African American, and 5 Hispanic participants (4 individuals did not indicate their ethnicity). The participants in Sample 2 were 23% freshmen, 22% sophomores, 32% juniors, and 23% seniors.

PROCEDURE

Participants completed questionnaires in out-of-class testing sessions. The first sample completed a brief demographics questionnaire and a version of the Imaginary Audience Scale (Elkind & Bowen, 1979) modified to be appropriate for college students. For purposes of the present research, the wording of a few items was changed slightly to make the items appropriate for college students instead of children (similar to adjustments made by Peterson & Roscoe, 1991, and Rycek et al., 1998). For example, the item, "If you went to a party where you did not know most of the kids . . ." was changed to, "If you went to a party where you did not know most of the guests . . ." Four of the 12 items were modified because the original items referred specifically to children.

The second sample completed this scale along with selected measures of theoretically relevant constructs as follows: embarrassability, social desirability, social avoidance, fear of negative evaluation, self-esteem, self-monitoring, neuroticism, extraversion, openness, agreeableness, and conscientiousness.

MEASURES

The measures used in this study were chosen because they are among the most widely used measures of self-consciousness, social anxiety, and personality. Because the imaginary audience is conceptually similar to acute self-consciousness, it was expected to be related to other forms of self-focus. Several measures of social anxiety were included because it has been suggested that imaginary audience sensitivity may be a form of social anxiety rather than an indicator of cognitive development. In addition, it was deemed important to locate the imaginary audience construct within the Big Five model of personality (see John, 1990), the leading measurement paradigm of normal adult personality, to assess its position within the domain of trait constructs.

Imaginary Audience Scale. The Imaginary Audience Scale (Elkind & Bowen, 1979) was designed to measure children's and adolescents' concerns about being evaluated by an imaginary audience. The scale is composed of two six-item subscales: the Transient Self and the Abiding Self scales. The Abiding Self subscale measures self-consciousness associated with permanent characteristics of the self, and the Transient Self subscale measures self-consciousness stemming from temporary aspects of the self. Respondents read a series of short scenarios depicting potentially embarrassing situations and choose from three possible reactions to each situation: (a) a complete lack of willingness to participate (scored two points), (b) willingness to participate with some reservation or with some modification of behavior (scored one point), or (c) willingness to participate without concern (scored zero

points). Higher scores indicate a greater sensitivity to the existence of an imaginary audience.

Reliability evidence for scores on the Imaginary Audience Scale has been provided in several samples (Adams & Jones, 1981; Elkind & Bowen, 1979; Riley, Adams, & Nielsen, 1984). Internal consistency has been reported for items on the Imaginary Audience Scale measured by coefficients alpha ranging from .62 to .87. For the Transient Self subscale, alphas ranged from .56 to .74; for the Abiding Self subscale, alphas ranged from .60 to .84.

As an indication of validity, Riley et al. (1984) reported that subjects scored higher on the Imaginary Audience Scale when they were videotaped while completing the scale than those who were not. Imaginary Audience Scale scores have also been found to be directly correlated with measures of shyness, nervousness, and distress and inversely related to social skills (Cohn et al., 1988). Adams and Jones (1982) reported that perceived parental affection was negatively related to imaginary audience scores, and Ryan and Kuczkowski (1994) found imaginary audience scores to be significantly related to measures of public self-consciousness and social anxiety.

Embarrassability Scale. The Embarrassability Scale (Modigliani, 1966) contains 26 items measuring a person's propensity for embarrassment in various situations. Higher scores indicate a greater tendency to experience embarrassment. Reliability of the scale scores as assessed by coefficient alpha was .88 (Modigliani, 1968). Embarrassability Scale scores have been found to correlate positively with public self-consciousness (Edelmann, 1985), social anxiety (Leary, 1991), propensity for blushing, and fear of negative evaluation (Leary & Meadows, 1991) and negatively with extraversion and empathy (Edelmann & McCusker, 1986).

Social Desirability Scale. The Social Desirability Scale (Crowne & Marlowe, 1960) was developed to assess socially motivated response tendencies. People who score high on this measure tend to worry about what others think when they express their true feelings and thus may attempt to respond to items based on cultural conformity or the influence of public opinion. The scale has 33 items presented in true/false format. Crowne and Marlowe (1960) reported that the scale's internal consistency using the KR-20 formula was .88, and a classical theory test-retest reliability coefficient of .89 was obtained for a 1-month period. Scores on the Social Desirability Scale correlated moderately with scores on the Edwards Social Desirability Scale (Edwards, 1957) and with scores on the Minnesota Multiphasic Personality Inventory validity scales, K (motivational distortion), L (lie), and F (infrequency).

Social Avoidance and Distress Scale. The Social Avoidance and Distress Scale (Watson & Friend, 1969) assesses two aspects of an individual's social

evaluative anxiety. Watson and Friend (1969) found the Social Avoidance and Distress Scale scores to be internally reliable in their sample, with a KR-20 of .94, as well as temporally stable, with test-retest reliability coefficients of .68 and .79 for two separate samples. Validity evidence was demonstrated in one sample when subjects scoring high on the Social Avoidance and Distress Scale showed more discomfort in social situations and had greater preference for being alone as compared to their lower scoring counterparts.

Fear of Negative Evaluation Scale. Watson and Friend (1969) also developed the 30-item Fear of Negative Evaluation Scale to measure the degree to which a person is apprehensive regarding the disapproval of others (e.g., being worried about what others might think). Participants respond to each item by answering "true" or "false." Item analyses reported by Watson and Friend indicate adequate internal consistency (KR-20 = .94 to .96) with a mean item-total correlation of .72. Test-retest reliability coefficients ranged from .78 to .94. Validity evidence was suggested by correlations with measures of social approval, locus of control, dependency, abasement, and other measures of anxiety.

Self-Esteem Inventory. Participants' self-esteem was assessed by the Self-Esteem Inventory (Coopersmith, 1993), a 25-item measure of global self-esteem, a person's general attitude of self-approval. Higher scores are indicative of higher self-esteem. The test manual reports adequate indices of internal consistency (alpha coefficients range from .78 to .85 for various gender, ethnic, and age groups) for scores on the adult form. Self-esteem, as measured by this scale, has been shown to predict parental acceptance, parental affection, and democratic parenting styles (Coopersmith, 1967) as well as loneliness and number of friends (Carpenter, Hansson, Rountree, & Jones, 1984).

Self-Monitoring Scale. The Self-Monitoring Scale (Snyder, 1974) is a measure of the degree to which an individual observes and controls his or her behavior in diverse social situations. A three-factor interpretation of the scale has emerged as most useful (Briggs, Cheek, & Buss, 1980). These underlying dimensions are Extraversion (evidencing a lack of self-consciousness), Other-Directedness (concerned with meeting the expectations of others), and Acting (concerned with public speaking, performing, and entertaining others). The scale is scored separately for the three components. Alpha coefficients for the three subscales ranged from .66 (Acting) to .71 (Extraversion). Validity evidence was provided in relationships between scores on extraversion and sociability ($r = .36$), shyness ($r = -.56$), and self-esteem ($r = .38$). Scores on Other-Directedness were found to be related to public self-consciousness ($r = .28$) and shyness ($r = .37$). Acting and shyness scores were also correlated ($r = -.23$).

NEO Personality Inventory. The revised NEO Personality Inventory (Costa & McCrae, 1992) provides a broad measure of five major dimensions of normal adult personality: neuroticism, extraversion, openness, agreeableness, and conscientiousness. In addition, each of the five domains contains six facet scales that further define more specific personality traits. The NEO is a 240-item questionnaire answered in a 5-point Likert-type response format varying from *strongly disagree* to *strongly agree*. Costa and McCrae (1992) reported reliability estimates ranging from .86 (agreeableness) to .92 (neuroticism). Temporal stability was shown for scores on neuroticism, extraversion, and openness in a 6-year longitudinal study that yielded test-retest reliability coefficients of .68 to .83. Agreeableness and conscientiousness scores have produced test-retest correlations of .63 to .79 over a 3-year period. Ample validity evidence has been reported in the test manual across several samples.

Results

PSYCHOMETRIC PROPERTIES OF THE IMAGINARY AUDIENCE SCALE

To assess the operating characteristics of the modified version of the Imaginary Audience Scale, it was administered to participants comprising Sample 1. Table 1 shows the corrected item-total and item-scale correlations for each item along with alpha coefficients and median interitem correlations for the total Imaginary Audience Scale as well as the Transient Self and Abiding Self subscales. As can be seen, scores on the modified version of the Imaginary Audience Scale met conventional standards of internal consistency ($\alpha > .70$). The reliability estimates for the total scale scores as well as scores on both subscales exceeded those found originally by Elkind and Bowen (1979). The difference in the size of the correlations between each item and the Transient Self and Abiding Self subscale scores reflects the relative conceptual uniqueness of the two subscales, although the pattern is less apparent for the Transient Self subscale.

FACTOR STRUCTURE OF THE IMAGINARY AUDIENCE SCALE

Based on previous work (e.g., Adams & Jones, 1981; Elkind, 1967), the Imaginary Audience Scale items were subjected to a factor analysis using a principal axis extraction method that yielded three factors with eigenvalues of 1.0 or greater. Two meaningful factors were retained and rotated using the varimax procedure. Rotated pattern coefficients from this solution can be seen in Table 2. As shown in Table 2, Factor 1 generally represents the Abiding Self subscale (with the exception of Item 5), and Factor 2 can be interpreted as the Transient Self subscale. Thus, this two-factor solution very closely resembles the theoretically based subscales. This solution nearly replicates that of Elkind (1967).

Table 1
Item Analysis of the Imaginary Audience Scale

| Item | Item-Scale Correlations | | |
|--|-------------------------|--------------|-------------|
| | Transient Self | Abiding Self | Total Score |
| Transient Self Scale | | | |
| 1. You notice a spot on your pants at a party. | .36 | .33 | .40 |
| 3. You got a bad haircut and want to go to a basketball game. | .43 | .38 | .48 |
| 5. You have to give a presentation but your jeans have a tear in the seam. | .29 | .38 | .41 |
| 7. You fell and scraped your face before your picture is to be taken. | .36 | .19 | .31 |
| 9. Your jeans got pink spots on them in the wash, and you want to go to a party. | .24 | .10 | .19 |
| 10. You wore a costume to a party but it wasn't a costume party. | .27 | .21 | .28 |
| Abiding Self Scale | | | |
| 2. You told some visitors about yourself. | .25 | .46 | .40 |
| 4. You wonder what others are thinking of you at a party. | .37 | .39 | .45 |
| 6. You get anxious when someone watches you work. | .32 | .36 | .40 |
| 8. You worry about how much other people like you. | .30 | .35 | .38 |
| 11. You had to read an assignment in front of the class. | .29 | .57 | .48 |
| 12. You had to talk about your hobby in front of the class. | .34 | .64 | .56 |
| Coefficient alpha | .59 | .73 | .76 |

Subscale scores were computed by summing responses for those items written to capture each construct. The mean imaginary audience score for this sample of college students was 10.24, which is similar to the mean score for adolescents of 11.83 found by Adams and Jones (1981) and 8.14 found by Lapsley, Milstead, Quintana, Flannery, & Buss (1986). Furthermore, the mean Transient Self score for this sample was 4.74, compared to 5.55 (Adams & Jones, 1981), 4.51 (Elkind & Bowen, 1979), 4.43 (Gray & Hudson, 1984), and 3.48 (Lapsley et al., 1986). Finally, the mean Abiding Self score for this study was 5.51, compared to 6.28 (Adams & Jones, 1981), 5.64 (Elkind & Bowen, 1979), 5.54 (Gray & Hudson, 1984), and 4.66 (Lapsley et al., 1986). Thus, it appears that our sample means for young adults are generally comparable with those of previous studies involving adolescents.

Abiding Self scores were moderately correlated with Transient Self scores ($r = .38, p < .001$). This relationship was not unexpected; although both scales were designed to measure the degree to which an individual is

Table 2
Structure of the Imaginary Audience Scale

| Item | Factor 1 | Factor 2 | Communality |
|--|------------|------------|-------------|
| 12. You had to talk about your hobby in front of the class. | .73 | .15 | .55 |
| 2. You told some visitors about yourself. | .72 | -.07 | .52 |
| 11. You had to read an assignment in front of the class. | .62 | .18 | .41 |
| 8. You worry about how much other people like you. | .40 | .15 | .18 |
| 5. You have to give a presentation but your jeans have a tear in the seam. | .39 | .35 | .27 |
| 6. You get anxious when someone watches you work. | .39 | .14 | .17 |
| 4. You wonder what others are thinking of you at a party. | .28 | .26 | .15 |
| 1. You notice a spot on your pants at a party. | .11 | .65 | .43 |
| 3. You got a bad haircut and want to go to a basketball game. | .08 | .55 | .31 |
| 9. Your jeans got pink spots on them in the wash, and you want to go to a party. | .09 | .50 | .26 |
| 7. You fell and scraped your face before your picture is to be taken. | .16 | .39 | .18 |
| 10. You wore a costume to a party but it wasn't a costume party. | .05 | .22 | .05 |
| Proportion of variance accounted for | 16.92% | 12.08% | |

Note. Pattern coefficients in bold type indicate salient loadings for each factor.

willing to reveal aspects about the self to others, their underlying conceptualizations differ in that the Abiding Self ostensibly measures enduring features of the self, whereas the Transient Self measures temporary qualities.

CORRELATES OF THE IMAGINARY AUDIENCE SCALE

Comparisons of the Imaginary Audience Scale and its subscales with theoretically related variables were performed in a second sample of 101 college students (38 men and 63 women) by correlating imaginary audience scores with other self-focus measures. As is indicated in Table 3, as expected, imaginary audience scores were negatively associated with scores on self-esteem, social desirability, and the Extraversion and Acting subscales of the Self-Monitoring Scale. As predicted, imaginary audience scores were positively correlated with fear of negative evaluation, embarrassability, other-directedness (self-monitoring), and social avoidance and distress scores. Table 3 also indicates comparable patterns of correlations for the Abiding Self and Transient Self subscales, as anticipated, with only a few exceptions. For example,

Table 3

Validity Coefficients for the Imaginary Audience Scale (IAS)

| Related Constructs | Total IAS | Abiding Self | Transient Self |
|-------------------------------|-----------|--------------|----------------|
| Social avoidance and distress | .57* | .55* | .39* |
| Fear of negative evaluation | .60* | .57* | .42* |
| Embarrassability | .65* | .55* | .53* |
| Social desirability | -.20* | -.16 | -.17 |
| Self-esteem | -.46* | -.41* | -.35* |
| Self-monitoring | | | |
| Extraversion | -.30* | -.37* | -.13 |
| Other-directed | .29* | .19* | .28* |
| Acting | -.22* | -.26* | -.11 |

Note. $N = 101$.* $p < .01$

the Extraversion and Acting scales of self-monitoring are negatively related to the Abiding Self but not the Transient Self, whereas scores on the Other-Directedness scale are more strongly correlated with the Transient Self than the Abiding Self.

Correlation coefficients were also calculated between imaginary audience scores and the five global factors of the NEO Personality Inventory. As shown in Table 4, high imaginary audience scores were associated with high scores on neuroticism and low scores on extraversion and openness, and, for Transient Self only, conscientiousness. Correlations between imaginary audience scores and agreeableness scores were not statistically significant. Thus, imaginary audience scores appear to exhibit a characteristic pattern similar to other forms of social anxiety, that is, imaginary audience behavior appears to be defined for the most part by extraversion and neuroticism.

GENDER AND EDUCATION LEVEL DIFFERENCES IN IMAGINARY AUDIENCE PERCEPTION

ANOVA analyses were conducted using gender and education level (freshman, sophomore, junior, senior) as independent variables and using the total imaginary audience score as well as the Transient Self and Abiding Self subscale scores as dependent variables. Results indicated no statistically significant gender or education-level differences in self-reported susceptibility to the imaginary audience when the total imaginary audience score was used as the dependent variable, $F(1, 87) = 3.52, p = .07, \eta^2 = .04$, for gender; $F(3, 87) = 12.33, p = .65, \eta^2 = .02$ for education level; and $F(3, 87) = .60, p = .62, \eta^2 = .02$ for the interaction. Similarly, an examination of the Transient Self subscale scores revealed statistically nonsignificant differences as a function of gender and education level, $F(1, 87) = 2.86, p = .09, \eta^2 = .03$ for gender; $F(3, 87) = .76, p = .52, \eta^2 = .02$ for education level; and $F(3, 87) = .26, p = .85, \eta^2 = .01$ for the interaction. However, a significant gender effect was found for the Abiding Self subscale (representing lasting characteristics of the self),

Table 4
Correlations Between Imaginary Audience Scale (IAS) and Global Personality Domains

| NEO Domain | Total IAS | Abiding Self | Transient Self |
|-------------------|-----------|--------------|----------------|
| Neuroticism | .47* | .45* | .34* |
| Extraversion | -.37* | -.41* | -.20* |
| Openness | -.26* | -.13 | -.29* |
| Agreeableness | -.06 | -.01 | -.09 |
| Conscientiousness | -.19* | -.11 | -.21* |

Note. $N = 101$.

* $p < .01$.

whereby female participants ($M = 5.73$) reported more concern about self-presentation in front of an imaginary audience than did male participants ($M = 4.83$), $F(1, 87) = 4.67$, $p = .04$, $\eta^2 = .07$. No statistically significant effects were found for education level, $F(3, 87) = .22$, $p = .88$, $\eta^2 = .01$, or the interaction, $F(3, 87) = .82$, $p = .49$, $\eta^2 = .03$, when Abiding Self scores were used as the dependent variable.

Discussion

Most research using the Imaginary Audience Scale has involved adolescent or preadolescent samples. The primary objective of Study 1 was to assess the extent to which the Imaginary Audience Scale could be used in research with adult respondents. Reliability indices for scores on the Abiding Self subscale and the overall Imaginary Audience Scale met conventionally accepted levels; however, scores on the Transient Self subscale showed evidence of only moderate reliability. This finding was not altogether unexpected, however, as the Transient Self subscale assesses aspects of the self that are, by definition, inconsistent and changing. The Abiding Self subscale and total Imaginary Audience Scale scores also demonstrated validity through theoretically meaningful associations with both conceptually similar and dissimilar variables. Thus, these results provide preliminary support for the psychometric adequacy of the Imaginary Audience Scale among adult respondents.

The results of a factor-analytic treatment of scale items supported the conceptual distinction between the abiding self and the transient self among adults. Indeed, 11 of the 12 scale items loaded appropriately on one of two factors reflecting these dimensions of the imaginary audience phenomenon. The single misclassified item (Item 5) may have failed to load in a predictable fashion as a result of modifying the item to make it more appropriate for an adult sample. Specifically, the original item referred to having a rip in one's pants and going up to the front of the classroom to write an answer on the blackboard, a behavior that seemed unusual for college students. Accordingly, the item was altered to refer to "making a short presentation in front of

the class." Apparently, this modification was sufficient to change the focus of the item from the transient aspects of the self (the rip in one's pants) to the abiding aspects of the self (presenting one's self in front of the class). Nevertheless, the performance of this single item does not undermine the structural integrity of the Imaginary Audience Scale in the present study.

The lack of differences in imaginary audience scores across education levels and gender (except for the Abiding Self subscale) suggests that, at least within our data, educational level and gender were generally not related to imaginary audience scores. Frankenberger (2000) compared imaginary audience perceptions in adolescents and adults and found a significant gender effect with an eta squared of .14. We assumed this effect size for our comparisons and calculated power to be .88. Hence, it is unlikely that we have falsely retained the null hypothesis.

Thus, the results of Study 1 also may suggest two broad conclusions. First, the absence of differences in imaginary audience scores across education levels suggests that sensitivity to the imaginary audience remains salient beyond adolescence. These results may be interpreted as indicating that, contrary to Piaget's (1969) expectation of a curvilinear relationship between cognitive development and susceptibility to the imaginary audience, these variables may be related in a positively asymptotic fashion. That is, rather than emerging with the development of formal operational thought, reaching its peak in middle adolescence, and receding in early adulthood, imaginary audience susceptibility may continue to influence social functioning well into adulthood. Second, because Piaget's (1969) theory should apply equally well to males and females, the obtained difference on the Abiding Self subscale implies that cognitive development alone cannot adequately account for the emergence of the imaginary audience phenomenon. However, this conclusion must be qualified by the fact that gender differences were not obtained on either the transient self or the total imaginary audience score. Indeed, more direct tests of the relative importance of stage of cognitive development in imaginary audience behavior are called for at this point. Study 2 was conducted to address this issue.

Study 2: Social Anxiety, Cognitive Development, and Perception of an Imaginary Audience

Method

PARTICIPANTS

A total of 203 individuals (144 women and 59 men) ranging in age from 17 to 53 years ($M = 20$ years) participated in the study. They were recruited from general psychology courses at a large university and received course extra

credit for their contributions. The sample consisted of 142 Caucasian, 25 Asian American, 15 African American, and 18 Hispanic participants (3 participants did not indicate their ethnicity).

INSTRUMENTS AND PROCEDURE

Groups of participants attended hour-long sessions where they were given a packet containing a demographic questionnaire along with various scales. The purpose of Study 2 was to investigate the relationships between imaginary audience tendencies and both social anxiety and cognitive development. The scales described below were selected for use because they are some of the most popular measures of social anxiety. The measure of cognitive development was chosen because it is one of the few objective paper-and-pencil instruments available that classify individuals into cognitive stages as described by Piaget (1969). Participants completed the Imaginary Audience Scale, Fear of Negative Evaluation Scale, Social Avoidance and Distress Scale, and the Embarrassability Scale, all previously described in Study 1. In addition, the instruments described below were included.

Self-Consciousness Scale. The 23-item Self-Consciousness Scale (Fenigstein et al., 1975) was designed to measure three types of self-focus: public self-consciousness, private self-consciousness, and social anxiety. Higher scores indicate greater amounts of the characteristic. Scale scores demonstrated adequate internal reliability, with coefficient alpha of .84 for public self-consciousness, .75 for private self-consciousness, and .79 for social anxiety. Test-retest coefficients ranged from .74 (public self-consciousness) to .77 (social anxiety).

Interaction Anxiousness and Audience Scales. Leary (1983) developed the Interaction and Audience Anxiousness Scales to assess two types of situation-specific social anxiety: audience anxiety (12 items) and interaction anxiety (15 items). Reliability estimates (coefficient alphas) of .89 and .91 for interaction and audience anxiety scores, respectively, have been reported by Leary. Test-retest reliability coefficients were .80 and .84, respectively. Validity evidence was provided by significant correlations with scores on other measures of socially anxious emotions, such as social avoidance, social anxiety, and fear of negative evaluation.

Susceptibility to Embarrassment Scale. The Susceptibility to Embarrassment Scale (Kelly & Jones, 1997) was created to tap into those traits associated with a low threshold for experiencing embarrassment. The scale contains 25 items that are rated on a 7-point Likert-type scale from *not at all like me* to *very much like me*. Higher scores indicate a greater propensity for experiencing embarrassment. The Susceptibility to Embarrassment Scale

Table 5
Correlations With Measures of Social Anxiety and Cognitive Development

| Social Anxiety/Cognitive Measure | Total IAS | Abiding Self | Transient Self |
|--------------------------------------|-----------|--------------|----------------|
| Audience anxiety | .41 | .55 | .30 |
| Susceptibility to embarrassment | .75 | .68 | .61 |
| Fear of negative evaluation | .66 | .57 | .58 |
| Interaction anxiety | .29 | .28 | .21 |
| Private self-consciousness | .08 | -.05 | .19 |
| Public self-consciousness | .52 | .37 | .52 |
| Embarrassability | .41 | .38 | .32 |
| Social anxiety | .70 | .69 | .52 |
| Social avoidance and distress | .59 | .47 | .55 |
| Mean correlation | .52 | .46 | .43 |
| Piagetian objective formal reasoning | -.06 | -.01 | -.10 |

Note. IAS = Imaginary Audience Scale. All correlations above .20 are significant at $p < .001$.

produced reliable scores in the sample tested, with a coefficient alpha of .92 and an 8-week test-retest correlation of .64. Susceptibility to Embarrassment Scale scores are closely related to scores on numerous social anxiety measures (e.g., fear of negative evaluation, audience anxiety, interaction anxiety) and measures of emotions such as guilt. In the realm of normal personality, scores on the Susceptibility to Embarrassment Scale were primarily related to neuroticism and introversion.

Piagetian Objective Formal Reasoning Instrument. The Piagetian Objective Formal Reasoning Instrument (Burney, 1974) was developed for the purpose of assessing Piaget's three formal operational stages of cognitive development in a paper-and-pencil format. Internal consistency was measured with a KR-20 coefficient, which was .83. Validity coefficients indicated that there was a high correlation ($r = .85$) in the tested sample between scores on the paper-and-pencil instrument and scores on the popular Piagetian Task Instrument. Furthermore, when subjects were arranged into three categories (formal, transitional, concrete) on both instruments, there was an 84.6% agreement in classification between the two.

Results

Correlations were computed to assess the relationships between scores on the Imaginary Audience Scale and its subscales and scores on both the social anxiety measures and the objective measure of cognitive development, and these coefficients are presented in Table 5.

As can be seen in Table 5, imaginary audience scores were strongly related to scores on every measure of social anxiety, with the exception of private self-consciousness. A mean correlation for all social anxiety measures with

imaginary audience scores was computed using Fisher's r -to- z transformation procedure. Each Pearson r was first converted into a z score, and the entire set of standard scores was then averaged. Then, the averaged z was converted back into a Pearson r value. Accordingly, the obtained average correlation between imaginary audience sensitivity and social anxiety was .52, indicating that social anxiety generally accounted for approximately 27% of the variability in imaginary audience scores. However, as Table 5 also shows, no statistically significant relationship was found between imaginary audience scores and cognitive reasoning scores for these participants, indicating that cognitive stage, as operationalized by this measure, explained a negligible .4% of the variance in imaginary audience scores in this sample.

Discussion

The results of Study 1 hinted at the possibility that susceptibility to the imaginary audience may not be as strongly linked to cognitive developmental stage as Piagetian theory suggests. The goal of Study 2 was to test this notion directly by exploring the relative contributions of cognitive development and social anxiety to imaginary audience propensity. A very clear pattern of results emerged, suggesting that the imaginary audience phenomenon, at least as operationalized by the Imaginary Audience Scale, is unrelated to the capacity to engage in complex cognitive activity. This finding corroborates the results of other researchers (e.g., Gray & Hudson, 1984; Peterson, 1982; Ryan & Kuczkowski, 1994) who likewise found no relationship between cognitive development and imaginary audience behavior. (Power of .95 was calculated for this study; therefore, it is doubtful that the null hypothesis was falsely retained here.)

Moreover, the results of Study 2 suggest the following conclusions. First, the imaginary audience experience is related to dimensions of personality most strongly associated with generalized anxiety and with social anxiety in particular. Second, these correlations were generally more predictive of imaginary audience scores than were other dimensions of personality (e.g., conscientiousness) or measures of the self. Third, and most important for the present discussion, imaginary audience scores were more strongly related to scores on measures of social anxiety than to scores on the measure of cognitive reasoning ability included in this study.

The nonsignificant results obtained for cognitive development notwithstanding, it is undoubtedly too early to conclude that level of cognitive functioning is irrelevant to discussions of the numerous aspects of social evaluation, self-image, and so forth. Indeed, it seems likely that an individual must possess certain cognitive skills to represent mentally an audience of evaluative others in the first place. Thus, it is possible that the imaginary audience phenomenon is an example of social anxiety but that the capacity to

become socially anxious may depend ultimately on an individual's ability to think abstractly about the evaluative potential of other people. Additional research should seek to clarify this dynamic process by identifying the developmental course of the variables involved as well as the way these variables are linked causally.

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