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How are Curious People Viewed and How Do they Behave in Social Situations? From the Perspectives of Self, Friends, Parents, and Unacquainted Observers

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Abstract

Objective—People who are open and curious orient their lives around an appreciation of novelty and a strong urge to explore, discover, and grow. Researchers have recently shown that being an open, curious person is linked to healthy social outcomes.

Method—To better understand the benefits (and liabilities) of being a curious person, we used a multi-method design of social behavior to assess the perspectives of multiple informants including self, friends, and parents, and behavior coded from direct observations in unstructured social interactions.

Results—We found an impressive degree of convergence among self, friends, and parent reports of curiosity, and observer-rated behavioral correlates of curiosity. A curious personality was linked to a wide range of adaptive behaviors including tolerance of anxiety and uncertainty, positive emotional expressiveness, initiation of humor and playfulness, unconventional thinking, and a non-defensive, non-critical attitude.

Conclusions—This characterization of curious people provides insights into mechanisms underlying associated healthy social outcomes.

Keywords

curiosity; social interaction; friendships; anxiety; distress tolerance; humor; positive emotion

Curiosity is the predisposition to recognize and search for new knowledge and experiences (Berlyne, 1960; Izard, 1977; Spielberger & Starr, 1994; Tomkins, 1962). The psychological urge evoked by curiosity is accompanied by increased engagement with the world including exploratory behavior, meaning-making, and learning (Day, 1971; Kashdan & Steger, 2007; Panksepp, 2011). For decades, scientists have narrowly focused on how curiosity is relevant to achievement in school, work, and sports, and an appreciation of art (Silvia, 2006; Spielberger & Starr, 1994). Curiosity is neither an intrapersonal or interpersonal process by

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nature; it is relevant to any context where there is the potential for novelty, uncertainty, complexity, surprise, and conflict between the urges to approach or avoid stimuli (Berylne, 1960, 1967, 1971). Several scientists have argued that a family of individual difference variables that conceptually overlap with curiosity (i.e., novelty seeking, uncertainty orientation, need for structure, need for closure, need for cognition, openness to experience) are relevant to healthy social interactions and relationships (Kashdan & Fincham, 2004; McCrae, 1996; McCrae & Sutin, 2009). The present research extends this work about the relevance of curiosity to social functioning. Curious people are proposed to engage in behaviors that are particularly relevant for increasing the likelihood of positive social outcomes and healthy social relationships.

To understand the potential benefits of being a curious person, consider how curiosity is activated. Bottom-up curiosity is driven by immediate experience and a history of reinforcement for exploratory behavior (Loewenstein, 1994). A novel, complex, unexpected, or uncertain event results in a sense of wonder and a desire to explore it. For instance, upon hearing a scratching sound against the bedroom window of a high-rise apartment building, a person turns to notice a Koala bear. Activated by novel stimulation in an unusual context, few individuals have to be prodded to feel a sense of wonder; the experience of curiosity is often rapid and reflexive (e.g., Litman, 2005; Silvia, 2001). What is often forgotten, especially when the scope of the analysis extends to social situations, is that curiosity can also be wielded intentionally in a top-down manner. Top-down curiosity involves the intentional search for novel and/or challenging stimuli. For instance, when meeting a new person, instead of asking uninspiring questions about their occupation or other mundane facts, one might ask for opinions on topics without expecting or pursuing any specific answer (e.g., what would you do if you were driving on an empty highway and passed an unburied, dead body?). This self-initiated search for novelty is part of a larger behavioral pattern that is reinforced by engagement in the search itself (Sansone & Thoman, 2005; Wilson & DuFrene, 2009).

Although we are unaware of studies that have examined how curious people are viewed by partners interacting with them on multiple occasions (e.g., friends, parents), we suggest that the two different routes leading to curious exploration will account for a diverse range of social behavior. A common theme in discussing the relevance of curiosity to the social world is the management of anxious thoughts and feelings. Whether people are taking advantage of the growth potential of exploring interesting stimuli (top-down curiosity) or intentionally discovering and creating interesting situations (bottom-up curiosity), tension is experienced.

Any model of curiosity has to explain why different people experience the same event differently. A "funny" story told at a party will cause some audience members to laugh, others to feel anxious, and others to reach for their smartphones out of boredom. An appraisal model offers a useful understanding of when curiosity is generated (momentary state) and the cognitive underpinnings of dispositional or trait curiosity. According to Silvia (2006), people respond to the environment with two automatic, rapid cognitive judgments (or appraisals). First, can the target of attention be described as novel, complex, or challenging (growth potential)? Second, can this novel, complex, or challenging object be managed (coping potential)? Curiosity will only arise if a person believes that there is new information to be acquired and sufficient belief that the search for this information is manageable. The likelihood of these appraisals appears to account for individual differences in trait curiosity. Curious people have been shown to be more likely to uncover novelty in their environment (novelty potential) and when they do, report greater confidence that they can handle unwanted emotions and thoughts elicited by these events (coping potential) (Silvia, 2006, 2008; Silvia, Henson, & Templin, 2009; Spielberger & Starr, 1994). An

appraisal model has been useful in explaining why curious people are more likely to visually explore complex polygons, disturbing art, cognitively challenging books, unusual movies, and abstract poetry (Connelly, 2011; Silvia, 2005, 2006; Silvia & Berg, 2011; Turner & Silvia, 2006).

Starting with distress tolerance, an appraisal perspective offers insight into the diversity of social behaviors that might be linked to curiosity. Tension is experienced when experiences are encountered that are inconsistent with existing conceptual frameworks about the self, other people, and the world (Loevinger, 1976; Piaget, 1952). Researchers have provided preliminary evidence that when novel stimuli are confronted (bottom-up) or purposely sought (top-down), curious people show less defensive reactions (Kashdan, Afram, Brown, Birnbeck, & Drvoshanov, 2011; Kashdan, DeWall, et al., 2011). Although novel or challenging social interactions often leave less curious individuals mentally exhausted, curious people believe they can cope and therefore are more energized prior to, during, and after social situations (Silvia, 2005: Silvia, 2008; Thoman, Smith, & Silvia, 2011).

The flexibility of curious people offers a critical link to the social contexts that they chose, and the social behavior they enact in them. Curious people are psychologically flexible in that they are adept at committing effort toward interesting and deeply cherished goals despite the presence of pain/distress/tension (Kashdan & Rottenberg, 2010; Silvia, 2008). The cognitive flexibility inherent to curious people is best illustrated by their preference for: growth over safety, complexity over simplicity, autonomy over obedience and rules, and openness over closure (Litman, 2005; Roberts & Robins, 2000; Vittersø, Søholt, Hetland, Thoresen, & Røysamb, 2010). Because of their preference for new information (Loewenstein, 1994), curious people are less likely to prematurely commit to initial ideas and perspectives (Kruglanski & Webster, 1996). In fact, there is evidence that the need for structure and cognitive closure are not only inversely related to curiosity (Litman, 2010), but reside at the other end of the continuum (Mussel, 2010).

The Present Research

Prior studies have found that being a curious person is linked to positive social interactions (Kashdan et al., in press; Kashdan, McKnight, Fincham, & Rose, 2011; Kashdan & Roberts, 2004), but this past research has been limited to self-report measures and a narrow battery of questions on emotions and intimacy answered by previously unacquainted interaction partners. To better understand the social strengths (and potential liabilities) of curiosity, we explored associations with a wide range of behaviors that are part of forming initial impressions, engaging in social interactions, and creating deep, lasting connections with other people. To extend the literature, we addressed three basic questions: How do curious people evaluate their personality? How are curious people viewed by their friends and parents? How do curious people behave in social situations? To answer these questions, we used a multi-method approach spanning self-report data, informant reports, and third-party observers evaluating videotaped laboratory social interactions. Informant reports included the perspectives of long-term hometown friends, college friends, and parents. These data allowed us to examine whether people who are acquainted in different contexts agree on the degree to which a person is curious, and then extend prior research by illuminating the social behaviors linked to curiosity that might account for the creation of positive social environments for themselves and other people.

Based on prior work on the phenomenology of curiosity, we expected curious people to be engaged, thoughtful, influential, and oriented to growth opportunities during social interactions. Because curious people are psychologically flexible (Kashdan & Rottenberg, 2010), we expected them to be proactive and display equanimity in social situations. This

response might be visible to other people through frequent positive emotional expressiveness (e.g., smiles, laughter) and infrequent negative emotional expressiveness (e.g., tense, timid). Prior research has found cognitive flexibility to be an essential component of humor production (Vaid, 1999) and resilient responding (Waugh, Thompson, & Gotlib, 2011). This behavioral set might be supplemented by curious people's heightened capacity to discover and intentionally create interesting situations (bottom-up curiosity). In the social world, this might be visible to other people through a lack of self-consciousness, a non-defensive and non-judgmental attitude, and the initiation of playfulness, humor, and even rebellious acts. One of the benefits of our dataset was the availability of sufficient data to create a comprehensive estimate of each person's dispositional curiosity from ratings provided by the self, parents, hometown friends, and college friends (Letzring, Wells, and Funder, 2006). By studying overt social behavior across multiple situations for people varying in trait curiosity, the current study is designed to capture the three fundamental elements of personality (Funder, 2006) in the service of advancing understanding of the interpersonal relevance of curiosity.

Method

The data for this study come from the Riverside Accuracy Project (Phase I) data set (see Funder, Kolar, & Blackman, 1995 for more details). In its fullest form, the data set contains a multitude of self-reported personality surveys from 220 undergraduate students at the University of California, Riverside over a 3 year period from October of 1990 until June of 1993. Additionally this data set contains observed behavioral ratings of approximately 167 of these participants in three different 5 minute interactions with a partner of the opposite sex. This data set includes NEO-PI personality ratings of these undergraduate participants by three sets of informants: a) their parents, b) two hometown friends, and c) two college friends. In addition, this data set also includes CAQ personality ratings from self and college friend reports. Because some participants or friends missed sessions of the experiment, the ns for particular analyses vary.

Measures

The variables of interest in this study are self and informant (parents, hometown friends, and college friends) reports of Curiosity as measured by combining three of the six facets of the NEO-PI (Costa & McCrae, 1985), self and college friend ratings of personality as measured by the California Adult Q-Sort (CAQ: Block, 1978), and behavior as directly observed from an interaction with an opposite sex stranger in a five minute unstructured interaction, measured by the Riverside Behavioral Q-Sort version 2 (RBQ: Funder, Furr, & Colvin, 2000).

NEO-PI

The NEO-PI is a widely used personality inventory designed to measure the Big Five personality traits (Neuroticism, Extraversion, Openness, Conscientiousness, and Agreeableness) and some subscales. Participants completed the NEO-PI in the usual fashion rating themselves on a 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) scale. Parents, two hometown friends, and two college friends of the participants also rated the target participant on the NEO-PI. For each set of raters, a Curiosity composite was formed by averaging ratings from the items on three facets of the Openness scale: Action (eagerness to try new activities and obtain different experiences), Values (preference for novelty, growth, and change instead of convention, structure, and authority), and Ideas (epistemic curiosity). The Curiosity composite was created in this manner because the items on these three facets showed face validity for measuring Curiosity (e.g. "I have a lot of intellectual curiosity", "I think it's interesting to learn and develop new hobbies", "I often enjoy playing with theories

or abstract ideas") while the items on the Fantasy, Feelings, and Aesthetics subscales did not (e.g. "Poetry has little or no effect on me", "I experience a wide range of emotions or feelings", "I have an active fantasy life"). Prior research indicates that the three facets reflecting curiosity compose a distinct factor while the three we excluded are more relevant to perceptual openness, reflection, aesthetic appreciation, and imaginativeness (Griffin & Hesketh, 2004;Jang, Livesley, Angleitner, Riemann, & Vernon, 2002; Mussel, Winter, Gelleri, & Schuler, 2011). Below, in the results section, we report data analyses that provide further support for our measurement approach.

When available, two ratings from each pair of informants (i.e. parents, hometown friends, or college friends) were averaged to form a composite Curiosity score. The alpha coefficient where two parent ratings were available (n = 98) was .74. Because hometown friends and college friends formed indistinguishable pairs, the intra-class correlation was computed to estimate the reliability of the Curiosity composites. The intra-class correlation where two hometown friends were available (n = 74) was .44. The intra-class correlation where two college friends were available (n = 94) was .50. When two parents or friends were not available, the rating from the single friend or parent was used. Finally, to create a best and most comprehensive estimate of each subject's curiosity (where available) self-rated Curiosity, parent-rated Curiosity, hometown friend rated Curiosity, and college friend rated Curiosity were averaged to form an "aggregate" Curiosity score (Letzring et al., 2006).¹ The descriptive statistics for these Curiosity composites and their inter-correlations are displayed in Table 1.

California Adult Q-Set

The California Adult Q-Set (CAQ: Block, 1961; Bem & Funder, 1978) includes 100 wideranging personality characteristics (e.g. "Is concerned with philosophical problems", "Is basically anxious"). The CAQ was developed by Jack Block and his collaborators to provide a common language for personality assessment that was relatively comprehensive in nature. Previous studies have demonstrated that the Big 5 personality traits may be recovered from the CAQ (Costa & McCrae, 1992; McCrae & Costa, 1990); however the Big 5 does not exhaust the reliable variance in CAQ ratings (Lanning, 1994) because the individual CAQ items provide more fidelity (as opposed to bandwidth) for understanding personality than the Big 5. In addition, previous work has shown the CAQ to find associations with personality that are missed when using broader trait measures such as the Big 5 (Fast & Funder, 2008, 2010). Participants in this study rated themselves on these 100 items using a Q-sort procedure in which items are placed into a forced choice quasi-normal distribution ranging from 1 (extremely uncharacteristic) to 9 (extremely characteristic). Of the other informants, only college friends of the participants rated the participants on the CAQ (using the same Q-sort procedure). If two college friends were available for a participant, a composite rating was formed by taking the average of the two ratings. Of the 108 participants for whom two college friends provided CAQ ratings, the average intra-class correlation for the 100 items was .31 (SD = .17).

¹Because the goal was to use all information available whenever possible for this composite and participants varied on the number and kinds of reports they had completed, some composites were formed differently than others. Specifically 40 out of the 220 participants had no Curiosity scores from any source so they were not included. Seven participants only had one Curiosity source available (1 self only, 1 parents only, 2 hometown friends only, and 3 college friends only). Twenty-five participants had only two Curiosity sources available (11 self and college friends, 5 self and parents, 6 hometown friends and self, and 3 parents and hometown friends). Fifty-three had three Curiosity sources available (11 self, parents, and college friends; 27 self, college friends and hometown friends; and 15 self, parents, and hometown friends). Lastly, 95 out of the 180 participants with any Curiosity sources available at all had data from all four possible sources.

Unstructured Interaction and Behavioral Coding

Participants were scheduled to appear in previously unacquainted mixed sex dyads. When the second participant arrived for the interaction the experimenter switched on a videotape recorder and camera in plain sight, told the participants to "talk about whatever you'd like," and left for 5 minutes. And the end of 5 minutes the experimenter returned to the room, stopped the video tape, and gave instructions for another interaction not relevant for the study presented here.

Upon completion of data collection, the 5 minute video tapes were coded for behavior using the Riverside Behavioral Q-Sort version 2 (RBQ: Funder, et al., 2000). The RBQ (version 2) contains 64 items which describe social behavior at a mid-level of analysis (e.g. Acts playful, smiles frequently, expresses insecurity). Sets of four research assistants coded each participant in the interaction using the Q-Sort technique (described above in CAQ section) to sort the 64 items into a forced choice quasi-normal distribution ranging from 1 (*extremely uncharacteristic*) to 9 (*extremely characteristic*). The four codings were aggregated to create composite behavioral scores for each participant. The intra-class correlation coefficient for the aggregated behavioral composites ranged from .08 to .80 with a mean of .53.

Results

Factor Analyses

Prior research has supported the multi-dimensional nature of the higher-order personality factor of Openness to Experience, with a factor characterized as Curiosity that is related but distinct from a factor characterizing Reflection or Perceptual Openness (Griffin & Hesketh, 2004; Jang et al., 2002; Mussel et al., 2011). With an interest in measuring and studying curiosity, we sought to replicate these findings. Using self-rated personality scores, we compared a one-factor model of Openness to Experience facets (Fantasy, Aesthetics, Feelings, Actions, Ideas, and Values) with a two-factor model separating Perceptual Openness (Fantasy, Aesthetics, and Feelings) from Curiosity (Actions, Ideas, and Values). First, we conducted confirmatory factor analyses separately for the one-factor model, $X^2(9)$ = 38.24, p = .002, GFI = .93, CFI = .85, SRMR = .07, and two-factor model, $X^2(8) = 29.01$, p = .0003, GFI = .95, CFI = .89, SRMR = .06 (see Figure 1). Second, we compared the relative model fit among the models. We found evidence to suggest that the two-factor model led to significant improvements in model fit, $X_{diff}^2 = 29.01$, p = .00239. Thus, we found continued support for a sub-dimension of Openness to Experience that has been repeatedly labeled as *Curiosity*. For subsequent analyses, we used a composite score of the Curiosity facets in Figure 1.

Primary Question-How do curious people perceive themselves?

To answer this question, we examined correlations between self-rated personality from the CAQ with: self-reported curiosity, college friend reported curiosity, parent-reported curiosity, hometown friend reported curiosity, and "aggregate" curiosity scores; displayed in Table 2. For ease of presentation, only CAQ items with at least one correlation statistically significant at the .05 alpha level were displayed. For each rater perspective, the average absolute correlation between curiosity and the CAQ was computed and tested for statistical significance following the randomization procedure outlined by Sherman and Funder (2009). A statistically significant average absolute *r* indicates that, on average, the relationship between curiosity and personality (as indexed by the CAQ) is greater than expected by chance. All four perspectives, and the "aggregate" curiosity composite, indicated that the associations in Table 2 were unlikely to be due to chance alone.² In addition, using split-half resampling (Sherman & Wood, in prep), we found evidence for the reliability of the patterns of correlations for each rater. Reliabilities for full CAQ patterns of

correlations were .66, .53, .54, .51, and .73 for self, college, parents, hometown, and "aggregate" ratings, respectively.³ Finally, the vector correlations (i.e. correlations among the four left-most patterns of correlations) in Table 2 indicated that the patterns of correlations were stable across raters. Leading to an average vector correlation of .71, the vector correlations were .77 for self-college friends, .75 for self-parents, .76 for self-hometown friends, .64 for college friends-parents, .66 for college friends-hometown friends, and .66 for parents-hometown friends.

Results indicated that highly curious people (from all four perspectives) viewed themselves as appreciative of beauty, philosophical and intelligent, unconventional and rebellious thinkers, non-judgmental of other people, comfortable with uncertainty, constantly trying to stretch limits, and flexible with gender norms. Few discrepancies existed among rater perspectives (e.g., only parent rated curiosity was positively correlated with "responds to humor", r = .26).

Primary Question-How are curious people viewed by their friends?

To answer this question, the Curiosity scores (from four different perspectives and the "aggregate" composite) were correlated with college friend rated personality from the CAQ. Only CAQ items with at least one correlation statistically significant at the .05 alpha level are displayed in Table 3. As before, we calculated whether the average absolute correlations between the CAQ and various raters of curiosity might be due to chance. Self-ratings of curiosity and college friend ratings of curiosity were associated with college friend ratings of personality above chance levels (as evidenced by the average absolute *r*s in Table 3), although parent and hometown friend ratings of curiosity were not. However, "aggregate" curiosity scores were related to college friend rated personality above chance levels (average absolute *r* = .096) indicating that curiosity is related to how people's social behavior are viewed by friends. The reliabilities for the patterns of correlations in Table 3 were .39, .59, . 25, .25, and .58 for each rater perspective respectively, which were lower than those seen using self-ratings of the CAQ. However, the vector correlations between the four left-most columns of Table 3 indicated stability across raters (average vector correlation *r* = .56, with vector correlations ranging between .51 and .65).

The pattern of correlations suggested that college friends see highly curious people as rebellious, unconventional, appreciative of beauty, philosophical, socially perceptive, non-conservative, flexible with gender norms, and failing to protect close friends. This pattern of correlations is similar to the pattern uncovered between self-rated curiosity and personality (Table 2). In fact, the vector correlation between the pattern of correlations with "aggregate" curiosity in Table 2 with the pattern of correlations with "aggregate" curiosity in Table 3 is r = .70. Thus, there is strong convergence between how a person (self) and their friends agree about what highly curious people are like.

 $^{^{2}}$ This randomization test helps protect against capitalizing on chance findings (i.e. family-wise Type I error rates) because it empirically estimates the distribution of average absolute effect sizes one would find if there were really no associations to be found. ³These reliability numbers were calculated as follows: First, split the sample of participants into two random halves. Second, compute the correlations between the Openness scores and the CAQ scores for each half. Next, correlate the two resulting set of correlations with each other to obtain a split-half correlation. Finally, apply the Spearman-Brown prophecy formula (where the number of measures is 2) to obtain a reliability estimate for the full vector of 100 correlations for the full sample. In this application, for each set of correlations with the CAQ, this procedure was repeated 100 times and the average reliability of those 100 repetitions was taken as the best estimate of the reliability for the vector of correlations. These reliability coefficients can be interpreted as the expected correlation between the observed 100 correlations with the CAQ and the correlations one would obtain with a new sample of the same size from the same population.

Primary Question-How do curious people behave?

To answer this question curiosity scores from the four perspectives, as well as "aggregate" curiosity scores, were correlated with observed behavior from the unstructured five minute interaction. Only correlations statistically significant at the .05 alpha level were displayed in Table 4. Again, we calculated whether the average absolute correlations between the RBQ and various raters of curiosity might be due to chance. Although self-ratings and parental-ratings of curiosity were correlated with behavior above chance levels (as evidenced by the average absolute *r*s in Table 4), college friend and hometown friend-ratings were not. However, "aggregate" Curiosity scores were related to behavior above chance levels (average absolute r = .086) indicating that curiosity is related to social behavior in this context. The reliabilities for the patterns of correlations in Table 4 were .46, .43, .09, .04, and .43 for each column respectively. The most consistent pattern of correlations in Table 4 were found for self (.25 for self-college friends, .63 for self-parents, .70 for self-hometown friends), parent (.63 for parents-hometown friends), and "aggregate" ratings of curiosity. However, all vector correlations amongst the four left-most columns showed acceptable agreement between perspectives with an average correlation of .45.

Independent observers rated highly curious people in the social interaction as more likely to initiate humor, undermine or sabotage partners, exhibit intelligence, be expressive of positive emotions, and less likely to express anxiety, fearfulness, or timidity. These social behaviors converge with the observations made by various friends and parents in Tables 2 and 3.

To further ensure that these behavioral correlates of Curiosity are not simply the results of chance findings, we acquired behavioral prediction ratings from two experts on Curiosity who were not privy to the results of this study. These two experts independently rated, for each of the 64 RBQ behaviors, the degree to which a highly Curious person would engage in these behaviors using the same 1 (*Extremely Uncharacteristic*) to 9 (*Extremely Characteristic*) scale using the same Q-sort procedure as the behavioral coders. These two expert predictions were correlated with each other, r = .76, resulting in an alpha reliability for a composite of the two ratings of .86.⁴ The full vector of correlations between "aggregate" Curiosity and observed behavior (partially shown in the rightmost column of Table 4), was then correlated with this composite of predicted behaviors. The resulting correlation of r = .47 indicates that the observed behavioral correlates of Curiosity are consistent with the predictions made by leading Curiosity theorists.

Discussion

This study contributes important information about how curious people behave in social situations. Self-assessments of curious people converged strongly with the impressions of college friends, hometown friends, parents, and independent observers watching videotapes of unstructured social interactions. The findings of this multi-method study indicate that curious people possess a number of adaptive attributes including an appreciation of beauty, enjoyment of complex and abstract thinking, strong intellectual capacity, initiation of humor and playfulness, comfort with uncertainty and anxiety, lack of timidity, and a tendency to avoid judging, criticizing, or blaming other people. These strengths are visible to long-term friends, parents, and unacquainted observers who see them for five minutes in a laboratory. Other qualities of curious people are more contextually sensitive in their adaptability, including liberal attitudes, unconventional thinking, and rebelliousness. Upon being observed when interacting with a stranger, a few potential liabilities of curious people

⁴These composite predicted RBQ scores are available at http://toddkashdan.com/articles.php

emerged such as attempts to undermine and sabotage, and a tendencies to interview rather than engage with interaction partners and to emphasize accomplishments.

By measuring personality and directly observed behavior, the current research makes several contributions to the literature on curiosity. Curiosity in social situations and relationships is associated positively with a wide variety of adaptive behavior and relatively few liabilities. The specific behaviors associated with curiosity fit well with prior theory and research. Curious people were observed by others to be less anxious, timid, defensive, and concerned about uncertainty, fitting with theoretical accounts that curiosity is generated by beliefs that novelty, complexity, and uncertainty are desirable (novelty potential) and any distress evoked by the events will be manageable (coping potential) (Silvia, 2005, 2008). Prior support for this appraisal model has been limited to artificial laboratory stimuli including time spent viewing random polygons, art, poetry, and movie clips (Connelly, 2011; Silvia, 2005, 2006; Silvia & Berg, 2011; Turner & Silvia, 2006). The current study also extends a small body of work suggesting that curious people report being less anxious during initial encounters with strangers (Kashdan & Roberts, 2004, 2006) and less likely to respond to angry feelings with aggressive behavior (Kashdan et al., in press). As for potential liabilities, a single study (Study 3; Kashdan et al., 2011) found that curious people have a tendency to be selfish in initial social encounters, with a stronger motive to showcase their strengths and learn new information than make a good impression and form lasting relationships. Data in the current research extend this finding as there was a small positive association between curiosity and observations that they tend to emphasize accomplishments, interview partners, and care less about protecting people close to them.

It is easy to envision that some people find the behavioral profile of curious people to be attractive. Others, however, might be repelled, viewing the intense enthusiasm, intellectual interests, and unreserved, unconventional style to be overwhelming. Research shows that the average person prefers a moderate level of involvement and self-disclosure early in relationships (Collins & Miller, 1994). Highly curious people also appear more likely to violate social norms with liberal attitudes and non-conforming behavior, which could make some social partners uncomfortable. Without good listening skills and concern for the welfare of other people, these social behaviors can interfere with healthy conversations and the development of intimate, meaningful, lasting friendships and romances.

At the same time, the social perceptiveness of curious people suggests that they are relatively successful at adapting to varying situational demands (e.g., Matsumoto et al., 2000). High curiosity may facilitate self-expansion during the early stages of relationship formation and then contribute to the maintenance of relationship passion as years progress (Aron, Norman, Aron, McKenna, & Hyemann, 2000; Carson, Carson, Gil, & Baucom, 2007; Graham, 2008) because of the initiation of humor, playfulness, unconventional thinking, and wide range of interests characteristic of curious people. The heterogeneity of reactions to curious people would explain near-zero relations with feelings of closeness when social context is ignored (Kashdan et al., 2011). Our findings illuminate behaviors that help explain the social outcomes of curious people. Using multiple waves of data, further research can examine the link between curiosity and the quality of existing relationships, and whether the particular matrix of social behaviors found in this study operates as mediating mechanisms.

The major strength of this study was that we moved beyond self-reports to address actual behaviors as viewed by multiple informants (Baumeister, Vohs, & Funder, 2007). Convergence in the social behaviors of curious people as indicated by themselves, college friends, parents, and observers of only five minutes of social activity was impressive. The behavioral assessment approach has shown excellent reliability and validity in prior work

(Funder et al., 1995, 2000). Although prior studies examine the relevance of curiosity in romantic relationships (e.g., Kashdan et al, in press), to our knowledge, this is the first study to examine how curiosity is relevant in friendships and relationships between adults and their parents. Another strength of this research was the lack of reliance on a single selfreport measure of curiosity. Instead, we measured individual differences in curiosity through the lens of multiple perspectives or people who have known the target in very different contexts. For instance, there is a stark contrast in what parents observe compared to college friends. This included an attempt to handle this wide divergence of perspectives by creating a comprehensive 360 degree measure that averaged curiosity ratings across informants (an approach that has been used successfully in the past but infrequently adopted; Letzring et al., 2006). The social behaviors of curious people remained fairly stable across informants, suggesting that curiosity is visible to other people in a variety of social contexts. Our findings fit with other research showing that compared to other personality traits, openness to experience and curiosity is one of the easiest qualities to recognize in terms of the availability of rapid cues (Carney, Colvin, & Hall, 2007). Because curiosity cannot be defined as an interpersonal or intrapersonal dimension, evidence for the coherence and visibility of highly curious people's social behavior across contexts become even more impressive.

Future Directions, Caveats, and Conclusions

Our study addresses the social behavior of curious people. Although prior research demonstrates that curiosity has implications for social interactions and interpersonal relationships (Kashdan et al., 2011, in press; Kashdan & Roberts, 2004), little is known about specific behaviors and the contexts where they arise. We discussed theoretically why the behaviors identified in this study might account for some of the social outcomes of curious people, but future work is needed to experimentally address these questions. Curiosity is much easier to manipulate when researchers are interested in reactions to static stimuli such as pictures or text; curiosity is more difficult to manipulate in social situations because the conversations and activities that evoke momentary curiosity in one person is likely to lead to boredom or indifference in another subset of people. These challenges can be potentially overcome by self-selecting individuals who are interested or disinterested in particular social situations. For instance, selecting people who are motivated to find new friends or a romantic partner and manipulating expectations of who their partner will be and what they will talk about or do together. In addition to experimental approaches to study curiosity in the social world, other methods, such as experience sampling could be used to further our knowledge of how curious people behave in their normal, daily interactions and how this is moderated by the type of interaction partner, setting, and goals.

Despite the use of multiple methods and informants in our study including self-report, report from naturalistic relationships, and behavioral observations, it is still cross-sectional in design. Without directly manipulating curiosity, we are unable to determine if curiosity and these social behaviors are causally related. It is possible that other, unmeasured, covariates could partially account for the relationship. Our use of archival data also limited the variables we could examine, and we used a subset of relevant items from the higher-order personality dimension of "Openness to Experience" to operationalize trait curiosity. We believe that prior theory and empirical data support our approach. Prior work shows that a large, positive relation exists between trait curiosity and openness to experience, exceeding correlation coefficients of .50 (e.g., Kashdan et al., 2004, 2009, in press). As described by McCrae (1994), "*Openness to Experience* is an apt label, because it suggests a preference for new and different in many different aspects of life." This includes being receptive to a variety of experiences, and psychological flexibility— being able to adapt to contextual changes and shift perspectives when attending to inner thoughts and feelings, other people,

and environmental cues (McCrae, 1996; McCrae & Costa, 1997). To create a measure of curiosity, we relied on the face-validity of items that are relevant (facets of Actions, Ideas, and Values) and irrelevant (facets of Fantasy, Aesthetics, and Feelings) to the construct of curiosity (Berlyne, 1960; Kashdan, 2004; Litman, 2005; Loewenstein, 1994; Spielberger & Starr, 1994). Of particular importance, this is the fourth study to support the presence of a curiosity factor of Openness to Experience and how it is related but distinct from the facets of Fantasy, Aesthetics, and Feelings (Griffin & Hesketh, 2004; Jang et al., 2002; Mussel, Winter, Gelleri, & Schuler, 2011). The consistency of these findings, along with the theoretical support, increases our confidence in the current measure of curiosity. It is extremely difficult to collect comprehensive laboratory and cross-informant data for a large sample and thus, we believe it was fortuitous to find a reliable, valid measure of curiosity in an archival dataset.

Our study expands current knowledge of the social implication of curiosity by addressing the entire triad of personality: people, situations, and behavior (Funder, 2006). To fully understand the implications of curiosity in the social world, future studies should address changes over time in personality and interpersonal outcomes. Personality traits do not influence social behavior and interpersonal relationships in a vacuum, but rather there is likely a complex interplay with certain combinations that are particularly optimal and problematic, respectively. The present research extends prior knowledge of trait curiosity with a unique multi-method approach leading to empirical evidence for the idea that curious people possess a wide range of strengths in the interpersonal domain including distress tolerance, aesthetic appreciation, intellect, courage, humor, playfulness, and an open, receptive attitude toward ideas and perspectives that differ from their own and conventional thinking. Incorporating the construct of curiosity into existing theory and research on social interactions, romantic relationships, friendships, and group dynamics, could be highly profitable.

Acknowledgments

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	z	Mean	SD	Median	Alpha	s	С	Р	Н
Self Curiosity	171	19.77	3.67	19.67	.59	I.	.39	.53	.41
College Curiosity	147	18.08	2.88	17.83	.49		ŀ.	.32	.37
Parent Curiosity	133	18.48	2.77	18.33	.49			١.	.30
Hometown Curiosity	151	18.59	2.98	18.33	.53				I.
"Aggregate" Curiosity	180	18.78	2.33	18.56	.73				

Note: "Aggregate" Curiosity is an unweighted composite of Self, College, Parent and Hometown Curiosity composites.

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## - CAQ Item	Self	College	Parents	Home	''Aggregate''
Positive Correlates	N=171	N=152	N=130	N=147	N=175
66 – Enjoys esthetic impressions	.29 ***	.35 ***	.28**	.33 ***	.42
51 - Values intellectual/cognitive matters	.32 ***	.29 ***	.29	.25 **	.38***
90 – Concerned w/philosophical problems	.31***	.35 ***	.24 **	$.16^{*}$.36***
39 - Unconventional thought process	.23 **	.17*	.28**	.28***	.32
62 - Rebellious/non-conforming	.27 ***	.21*	.18*	.23 **	.31 ***
24 - Prides self on being objective/rational	.29 ***	60.	.03	.25 **	.26***
65 – Pushes/tries to stretch limits	.19*	.18*	.14	.12	.20 **
96 - Values own independence	.17*	.11	60.	.20*	.17*
46 – Fantasizes/daydreams	.10	$.16^+$.07	.20*	.17*
60 - Insight into own motives/behaviors	.10	.12	.19*	.13	$.16^{*}$
15 - Skilled in imaginative play, pretending, humor	.17*	.13	.21*	01	.15*
98 - Verbally fluent	$.16^*$.14+	.15+	60.	.15*
03 – Has a wide range of interests	.20 **	01	60.	.11	.15*
83 – Sees heart of important problems	.10	80.	.17*	.11	$.14^{+}$
05 – Behaves in a giving way to others	.07	.01	.20*	03	60.
<u>Negative Correlates</u>					
07 – Favors conservative values	31 ***	26	29 ***	22 **	33 ***
41 – Moralistic	30 ***	17*	24 **	24 **	31 ***
63 - Judges self and others in conventional terms	21	22 **	18*	18*	26 ***
09 - Uncomfortable w/uncertainty and complexities	21	22 **	18*	12	24 **
93 – Behaves in gender consistent manner	17*	13	22*	11	22 ^{**}
49 – Basically distrustful of others	21 **	16^{+}	19*	12	22 **
76 - Projects own feelings onto others	25 ***	26	06	02	21 **

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## - CAQ Item	Self	College	Parents	Home	"Aggregate"
Positive Correlates	N=171	N=152	N=130	N=147	N=175
12 – Self-defensive	25 **	17*	04	11	20 **
40 – Generally fearful	22 ^{**}	06	11	13	20 **
25 - Delays gratification unnecessarily	15+	15+	12	20*	19*
45 – Brittle ego-defense system	18*	10	06	11	17*
11 - Protective of those close to him or her	11	14+	14	14+	17*
13 - Thin-skinned; Sensitive to criticism	13+	12	06	22 **	16*
21 - Arouses nurturant feelings in others	19*	10	18*	06	15*
22 – Feels lack of personal meaning in life	13+	03	25 **	07	14+
89 – Compares self to others	12	08	26 **	07	14+
23 – Transfers/projects blame	16^{*}	08	02	-00	13+
86 – Suppresses anxiety/conflicts	15 *	.04	05	11	14+
91 – Is power oriented	08	.08	26**	00.	10
34 – Over-reactive to minor frustrations	19*	15+	07	.06	-00
78 - Feels cheated/victimized by life	08	90.	17*	07	07
06 – Is fastidious	03	15+	19*	05	06
Average Absolute r	.107 ***	.096 ***	.102**	.089 **	.112***
Note. CAQ Item content is abbreviated.					
Only items with at least one correlate with $p < .05$ are sl	hown. Tabl€	ordered by	y "Aggregat	e" column	
*** p<.001					
p < 0					
p < .05					
^+p < .10					

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Table 3

College Informant-Rated Personality Correlates of Curiosity as Rated by Different Perspectives

## - CAO trong	Salf	Collogo	Darante	Homo	"A according ??
	TIAC	College	rarents	allou	Aggregate
Positive Correlates	N=152	N=145	N=116	N=132	N=155
62 – Rebellious/non-conforming	.32 ***	.36 ^{***}	.20*	.21*	.38
39 - Unconventional thought process	.23 **	.25 **	.21*	.28**	.32 ***
66 – Enjoys esthetic impressions	.11	.35 ***	$.16^+$.22 **	.24 **
46 – Fantasizes/daydreams	80.	.26**	.11	.24 **	.21 **
58 - Enjoys sensuous experiences	.08	.17*	$.18^+$.11	.17*
90 - Concerned w/philosophical problems	90.	.38	.19*	.04	.20*
08 – High degree of intellectual capacity	.15+	.15+	.05	.24 **	.19*
73 – Perceives contexts in sexual terms	.13	.18*	.05	.12	.16*
86 - Suppresses anxiety/conflicts	.15+	08	02	$.16^+$.11
15 - Skilled in imaginative play, pretending, humor	.17*	60:	.08	.03	.13
64 - Is socially perceptive	.04	.25 **	60.	01	.11
55 – Self-defeating	.21 ^{**}	.03	00.	02	.13
56 – Responds to humor	.04	.04	.26**	.01	.10
48 – Keeps people at a distance	.17*	90.	00.	.08	.13
04 – Is a talkative individual	80.	.07	.19*	01	.10
87 - Interprets simple situations in complex ways	02	.04	.10	.19*	.08
44 – Evaluates motivations of others	04	11.	.08	.04	.04
54 - Emphasizes being w/others	60.	60.	.03	07	.04
29 - Turned to for advice/reassurance	03	.10	00.	-00	01
Negative Correlates					
07 – Favors conservative values	24 **	35 ***	20^{*}	17+	34 ***
11 – Protective of those close to him or her	22 ^{**}	14+	25 **	30 ^{***}	30 ***
63 – Judges self and others in conventional terms	07	26 **	24*	17+	21 **

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## - CAQ Item	Self	College	Parents	Home	"Aggregate"
Positive Correlates	N=152	N=145	N=116	N=132	N=155
41 – Moralistic	17*	16 ⁺	14	13	19*
34 – Over-reactive to minor frustrations	12	16^{+}	05	07	15+
02 – Genuinely dependable person	08	16^{+}	13	20*	20*
93 – Behaves in gender consistent manner	18*	27 **	02	09	19 *
06 – Is fastidious	07	03	36 ***	08	14+
12 – Self-defensive	10	22 ^{**}	09	.04	13
09 – Uncomfortable w/uncertainty and complexities	20*	11	12	.04	15+
80 - Interested in members of opposite sex	18*	06	01	13	13
23 – Transfers/projects blame	11	24 **	.03	05	11
88 – Is personally charming	19*	13	00.	.01	12
Average Absolute <i>r</i>	.083	.106**	.078	.078	** 960.
Note. CAQ Item content is abbreviated.					
Only items with at least one correlate with $p < .05$ are s	hown. Tab	le ordered l	oy "Aggrega	tte" column	_
p < .001					
** p<.01					
* <i>p</i> <.05					
^{+}p < .10					

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Table 4

## - RBQ Item	Self	College	Parents	Home	"Aggregate"
Positive Correlates	N=159	N=136	N=121	N=139	N=165
26 - Initiates humor	.22	60.	.36***	.16 ⁺	.27 ***
34 - Tries to undermine/sabotage	.13+	.27 **	.07	11.	.17*
24 - Exhibits high degree of intelligence	.11	.19*	.06	.15+	.15+
47 - Blames others	.02	.18*	.07	11.	.13+
54 - Speaks fluently; Expresses ideas well	$.16^{*}$.01	.07	.05	.12
11 - Smiles frequently	.08	.03	.12	.18*	.12
55 - Emphasizes accomplishments	$.16^{*}$.13	60.	01	.12
21 - Is talkative	.19*	00.	.03	80.	.12
10 - Laughs frequently	.01	.04	.26**	.12	.10
06 - Dominates interaction	$.16^{*}$	03	06	01	.07
35 - Expresses hostility	02	.23 **	04	01	.05
63 - Acts playful	01	02	.29**	.01	.04
Negative Correlates					
23 - Physical signs of tension/anxiety	21 **	12	21*	16^+	23 **
09 - Reserved and unexpressive	17*	.02	20*	08*	19*
41 - Keeps partner(s) at a distance	14+	03	29	11	18^{*}
37 - Behaves in fearful or timid manner	17*	.05	22*	13	17*
02 - Interviews Partner(s)	08	24 **	15	09	15+
45 - Says negative things about self	17*	10	15+	.01	15+
20 - Expresses criticism	16*	09	14	03	14+
14 - Exhibits awkward interpersonal style	16*	.03	17+	13	14+
53 - Offers advice	-00	.01	.02	26 **	10

## - RBQ Item	Self	College	Parents	Home	"Aggregate"
Positive Correlates	N=159	N=136	N=121	N=139	N=165
Average Absolute r	.087	.073	.095 [*]	.079	$.086^*$
Note. RBQ Item content is abbreviated.					
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Only items with at least one correlate with p < .05 are shown. Table ordered by "Aggregate" column.

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p < .01p < .01p < .05p < .05p < .10