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The Five-Dimensional Curiosity Scale Revised (5DCR): Briefer subscales while separating overt and covert social curiosity

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ABSTRACT

Curiosity is a fundamental human motivation that influences learning, the acquisition of knowledge, and life fulfillment. Our ability to understand the benefits (and costs) of being a curious person hinges on adequate assessment. Synthesizing decades of prior research, our goal was to improve a well-validated, multi-dimensional measure of curiosity (Kashdan et al., 2018). First, we sought to distinguish between two types of social curiosity: the overt desire to learn from other people versus covert, surreptitious interest in what other people say and do. Second, we sought to remove weaker items and reduce the length of each subscale. Using data from a survey of 483 working adults (Study 1) and 460 community adults (Study 2), we found evidence to support the pre-existing four dimensions of curiosity (Joyous Exploration, Deprivation Sensitivity, Stress Tolerance, and Thrill Seeking) along with the separation of the fifth dimension into Overt Social Curiosity and Covert Social Curiosity. Each factor of the Five-Dimensional Curiosity Scale Revised (5DCR) had substantive relations with a battery of personality (e.g., Big Five, intellectual humility) and well-being (e.g., psychological need satisfaction) measures. With greater bandwidth and predictive power, the 5DCR offers new opportunities for basic research and the evaluation of curiosity enhancing interventions.

1. Introduction

In a world where people are deluged with information and can attain novel experiences with only a few keyboard clicks, curiosity becomes a potent psychological strength. Curiosity is about seeking information and experiences for their own sake through self-directed behavior. Theorists have argued that curiosity is critical to human learning and achievement (e.g., Kidd & Hayden, 2015; von Stumm, Hell, & Chamorro-Premuzic, 2011). Empiricists have discovered that the contribution of curiosity to the attainment of knowledge is largely independent of cognitive abilities (e.g., von Strumm, 2018).

Existing knowledge suggests curiosity is a multifaceted phenomenon that is more sophisticated than previous definitions. A large portion of research has conceptualized curiosity as one or two highly related facets, limiting empirical investigation and practical applications (e.g., Kashdan et al., 2009). In the present study, we dive into the social domain and differentiate between two types of social curiosity important to human functioning. At the same time, we refine the measurement of other curiosity facets.

1.1. Individual differences in curiosity

Our team recently synthesized decades of research to create a single, multi-dimensional measure called The Five Dimensional Curiosity Scale (5DC; Kashdan et al., 2018). This scale has already been validated by independent research teams in multiple countries (e.g., Birenbaum et al., 2019; Lydon-Staley, Zhou, Blevins, Zurn, & Bassett, 2019; Schutte & Malouff, 2016). The benefit of the 5DC is a comprehensive approach to operationalizing curiosity.

First, the 5DC distinguishes between experiences of curiosity that differ in emotional valence. There is the pleasurable experience of finding the world intriguing (Kashdan & Silvia, 2009), what we refer to as Joyous Exploration. In contrast, there is the anxiety and frustration of being aware of information you do not know, want to know, and devote considerable effort to uncover (Loewenstein, 1994). We call this second dimension Deprivation Sensitivity. When Joyous Exploration is present, people feel a love of learning, a sense of fascination about activities, places, and things, and in turn, experience high levels of well-being (e.g., Park, Peterson, & Seligman, 2004; Schutte & Malouff, 2019). When Deprivation Sensitivity is present, people experience discomfort and annoyance until they resolve information gaps

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(e.g., Litman, 2005; Noordewier & van Dijk, 2017). Any adequate assessment of curiosity must separate these initial two, distinct manifestations of curiosity.

Second, the degree to which someone is curious depends on two cognitive judgments. Initially, a person has to recognize that an event is interesting and warrants attention. Mysterious, novel, complex, uncertain, and/or ambiguous events tend to elicit interest (e.g., Berylne, 1954, 1960; Silvia, 2008a). If a person notices that an event has novelty potential, curiosity is initiated. A person will only be curious, however, if they also believe they can sufficiently cope with the distress that arises from exploring the novelty potential of a situation (Silvia, 2005, 2008a). If a person believes that a situation has novelty and coping potential, a person is said to be curious in the moment (i.e., state curiosity). People who endorse novelty and coping potential with high frequency, intensity, and/or longevity are said to be highly curious (i.e., trait curiosity) (e.g., Silvia, 2008b). From this work on the appraisal components of curiosity, the 5DC measures a dimension of curiosity referred to as Stress Tolerance—the dispositional tendency to handle the anxiety that arises when confronting the new. Some people go further than just tolerating stress and willingly accept social, physical, financial, and legal risks to acquire new experiences (Zuckerman, 1994). This additional dimension of curiosity, referred to as Thrill Seeking, is also part of the 5DC. Thrill Seeking is a particular dimension of curiosity where arousal is not something to be reduced, but rather is part of what makes events intrinsically desirable. A comprehensive assessment of curiosity must include these additional two, distinct manifestations of curiosity.

Third, as the final dimension, the 5DC addresses how people are curious about other people. Social Curiosity has been previously shown to be a distinct dimension (Litman & Pezzo, 2007; Renner, 2006). One of the most efficient and effective ways to acquire new information is to observe and communicate with other people (Aron, Aron, & Norman, 2001). Spending time with other people offers access to unique perspectives, philosophies, strengths and skill sets, and wisdom. By listening to what happened in their social interactions, one can quickly discern who is worthy of being a trusted ally and who should be distrusted (e.g., Dunbar, 2004).

1.2. Social curiosity

In the original 5DC, our research team created a single set of items that merged together overt and covert social curiosity. A recent set of studies suggests that being curious about other people's feelings, thoughts, and behavior is distinct from observing other people surreptitiously to acquire new information (e.g., Litman & Pezzo, 2007; Renner, 2006). The lack of differentiation in our measure of social curiosity could explain why the only correlation greater than .25 was with agreeableness (Kashdan et al., 2018). We sought to refine our scale by creating items that capture overt social curiosity as well as the snooping, prying, and surreptitious observation behaviors that capture covert social curiosity, and subsequentially determine whether these items are empirically distinct (i.e., by loading on two different factors with unique patterns of correlations with interpersonal outcomes).

General overt social curiosity is an interest in other people's behaviors, thoughts, and feelings. It is defined as an underlying motivation to understand what makes people tick, rather than a tendency to initiate conversations or socialize with others, per se (i.e., extraversion) (Litman & Pezzo, 2007). Social information is gathered by directly talking to people rather than surreptitious routes such as gossiping. Field research has estimated that over half of human conversation revolves around socializing, including how people behave in social situations, how people interpret life events, discussions about relationship dynamics, planning future social gatherings, and people's interests and preferences (Dunbar, Marriott, & Duncan, 1997). There seems to be a general disposition towards exploring the social lives of those around us. Individual differences exist on this disposition, including how much someone desires and acquires novel and unique information about specific people, as opposed to hearing about common human experiences.

Covert social curiosity is defined by how details about other people are discovered – indirect, surreptitious, secretive ways (Trudewind, 2000). For example, hearing about others from friends/families/neighbors; reading about others in articles or watching them in video footage; and observing their behaviors, expressions, and conversations from across the room. Covert social curiosity often functions to regulate self-esteem through the search for downward social comparisons, which would explain why the majority of gossip is negative (Wert & Salovey, 2004). Individual differences exist on how often people use covert versus overt covert strategies to learn about their social worlds.

1.3. Current research

Using two separate samples, we created and validated the Five-Dimensional Curiosity Scale Revised (5DCR). The primary reason for a revised version was the creation of a less crude assessment of social curiosity. Unlike the initial 5DC, we included a battery of measures to test the differential validity of the two sets of social curiosity items. Specifically, we expected Overt Social Curiosity to be related to healthier outcomes including the Big Five (higher agreeableness, extraversion, open-mindedness, and conscientiousness, and lower negative emotionality), interpersonal competencies, intellectual humility, and less loneliness, whereas we expected Covert Social Curiosity to be related to unhealthy outcomes such as gossiping and negative emotionality (e.g., social anxiety). Our hope was to transform the unsatisfactory 5DC Social Curiosity subscale into a theoretically and empirically defensible assessment.

With the inclusion of two distinct manifestations of social curiosity, we also aimed to improve the overall scale by reducing the length of each subscale. To do this, we sought to remove at least one item from each subscale that had the lowest conceptual and/or empirical support. We conducted additional tests of the temporal stability and construct validity of each of the five dimensions. We sought to replicate prior evidence of relations with well-being (e.g., satisfaction of psychological needs for autonomy, competence, and belonging), personality (using a more comprehensive measure of the Big Five with 15 facet level scores; Soto & John, 2017), and values (using a well-established framework and measure of 10 basic human values; Schwartz, 1996). We also included a wider range of measures that capture approach oriented behaviors and motivations in the workplace (e.g., innovative behaviors, willingness to dissent, promotion focus, engagement), and psychological strengths (e.g., wisdom during conflicts, mindfulness). Taken together, our goal was to improve an existing comprehensive, multi-dimensional measure to enable new research directions on the nature of dispositional curiosity.

2. Methods

2.1. Participants and procedures

Two samples of participants were recruited from Amazon's Mechanical Turk (i.e., MTurk), an online platform that allows people to participate in research studies for financial reimbursement. Data collected from Amazon Mechanical Turk has been demonstrated to be more generalizable than data collected from United States college students (Buhrmester, Kwang, & Gosling, 2011). Both samples completed an online Qualtrics survey consisting of self-report questionnaires and demographic questions. Each round of data collection was approved by the Institutional Review Board. Demographics are presented in Table 1.

Sample 1 participants were recruited via a study advertisement describing a “Job and Personality” survey where researchers “wish to know how your unique personality interacts with the culture of your

Table 1
Demographic Information.

	Study 1 English Workers Sample		Study 2 Online Mturk Sample	
Age (*t = 8.47, df = 941, p < .001*)				
Mean (SD)	35.63(10.06)		41.66(11.73)	
	Number	%	Number	%
Gender (*χ2 = 0.38, df = 1, p = .540*)				
Female	248	48.20%	226	58.10%
Race (*χ2 = 0.68, df = 4, p = .950*)				
White	380	78.70%	307	78.90%
African American	44	9.10%	35	9.00%
Hispanic	19	3.90%	13	3.30%
Asian or Pacific Islander	36	7.50%	32	8.20%
Other	4	0.80%	2	0.50%
Relationship Status (*χ2 = 21.50, df = 5, p < .001*)				
Single	150	31.10%	133	34.20%
Married	217	44.90%	179	46.00%
Long Term Relationship	85	17.60%	37	9.50%
Short Term Relationship	7	1.40%	2	0.50%
Divorced/Separated	23	4.70%	32	8.20%
Other	1	0.20%	6	1.50%
Children (*χ2 = 0.58, df = 1, p = .450*)				
No Children	251	52.10%	192	49.40%
Has Children	230	47.90%	197	50.60%
Education (*χ2 = 6.13, df = 3, p = .110*)				
Some High School	1	0.20%	6	1.50%
High School Graduation or Equivalent	204	10.60%	152	39.10%
4 year College Graduate	218	45.20%	188	48.00%
Graduate School or Professional Degree	60	12.40%	43	11.10%
Employment (*χ2 = 83.5, df = 6, p < .001*)				
Not Employed	0	0.00%	17	4.40%
Part Time	46	9.50%	51	13.10%
Full Time	437	90.50%	280	72.00%
Homemaker/Volunteer	0	0.00%	11	2.80%
Student (Full-time)	0	0.00%	3	0.80%
Retired	0	0.00%	14	3.60%
Other	0	0.00%	13	3.30%

Notes. Statistical significance between sample demographics is based on chi-square tests of contingency tables, except for age which is based on an independent two-samples t-test.

workplace." The following inclusion criteria were specified: (1) 18+ years old, (2) literate in the English language, (3) living in the United States, and (4) employed full-time or part-time in the United States. A total of 618 initial participants were recruited. After removing participants who failed attention checks (e.g., please select "slightly agree"), the final sample size was 483. Two follow-up surveys were administered to Sample 1 at two and eight months after the baseline survey. Due to attrition, sample size was 352 at the two-month follow up and 294 at the eight-month follow up. For each of the three timepoints, participants were informed the survey would take approximately 45 min to complete. The median time spent on each survey was 28.5, 28.2, and 27.8 min across the timepoints, respectively. Participants were compensated $4 through MTurk for each survey.

Sample 2 participants were recruited via a study advertisement describing a "Social Curiosity" survey. Participants were instructed that they would be "asked to review and electronically sign an informed consent before completing a set of questionnaires that will ask for information about your personality and functioning. This should take approximately 45 min." The inclusion criteria were identical to Sample 1, except employment in the United States was not required. A total of 475 participants were recruited. After removing participants with missing data on key variables, the final sample size was 460. The median time spent on the survey was 52.0 min. Participants were compensated $4 through MTurk.

2.2. Measures–study 1

Participants completed the 25-item Five Dimensional Curiosity Scale (5DC; Kashdan et al., 2018) along with 11 additional social curiosity items in the hopes of effectively disentangling overt and covert social curiosity dimensions. The 11 items were variants of items previously used to operationalize these two dimensions of social curiosity (e.g., Litman & Pezzo, 2007; Renner, 2006). The Stress Tolerance items of the 5DC are reversed scored such that higher scores reflect greater tolerance of the distress that arises from confronting new stimuli and situations. It should be noted that four of the five Deprivation Sensitivity items that survived the factor analyses in the 2008 article are from the Deprivation-type Curiosity scale (Litman, 2008); two items are identical and two items are adaptations. Our goal was to synthesize existing, isolated studies and measures into a single comprehensive approach.

The 10-item Work-Related Curiosity Scale (Mussel et al., 2012) assessed behavioral tendencies to seek information, acquire knowledge, learn, and think at the workplace (e.g., *I am interested in how my contribution impacts the company*). Participants responded to items on a 7-point scale from 0 = *totally disagree* to 6 = *totally agree*. Reliability was acceptable (α = .94).

The 15-item Mindful Attention Awareness Scale (Brown & Ryan, 2003) assessed trait mindfulness (e.g., *I find myself doing things without paying attention*). Responses were made on a 6-point scale from 1 = *almost always* to 6 = *almost never*; higher scores reflected higher mindfulness. Reliability was acceptable (α = .94).

The 6-item Innovative Behavior Scale (Scott & Bruce, 1994, modified by Rosing & Zacher, 2017) assessed the extent to which, at work, people exhibited behaviors involving innovation (e.g., *This month, at work I promoted and championed ideas to others*). Participants responded on a 7-point Likert scale from 1 = *strongly disagree* to 7 = *strongly agree*. Reliability was acceptable (α = .92).

Participants completed the Wise Reasoning Scale (Brienza, Kung, Santos, Bobocel, & Grossmann, 2018; Huynh, Oakes, Shay, & McGregor, 2017) with five subscales: the 4-item Considering Others' Perspectives (e.g., *Trying to put myself in the other person/people's shoes*), the 4-item Intellectual Humility (e.g., *Considering whether others' opinions might be more correct than mine*), the 3-item Search for Compromise (e.g., *Trying to find a way to accommodate both perspectives*), the 3-item Adopting Others' Perspective (e.g., *Trying to see the situation from the point of view of an uninvolved person*), and the 5-item Recognition of Change (e.g., *Looking for different solutions as the situation evolves*) subscales. Participants responded to items from 1 = *very useless* to 5 = *very useful* indicating the value of strategies in resolving personal conflicts. Reliability was acceptable (α = .82, .83, 84, .82, 86 [in order presented above]).

Participants completed the 10-item Work Regulatory Focus Scale (Petrou, Demerouti, & Häfner, 2013), with 5-item Prevention (e.g., *I focus my attention on avoiding failure at work*) and Promotion (e.g., *I tend to take risks at work in order to achieve success*) subscale. Participants responded to items from 1 = *totally disagree* to 5 = *totally agree*. Construct validity has been shown via positive correlations with job crafting during and after major organizational changes (Petrou & Demerouti, 2015). Reliability was acceptable (α = .79 and .84, respectively).

Participants completed a 4-item Willingness to Dissent measure (Dreu, Vries, Franssen, & Altink, 2000) that captures principled insubordination (e.g., *I dare to take a minority position within the team*). Participants responded on a 5-point Likert scale from 1 = *never* to 5 = *very often*. Construct validity has been shown with evidence that a willingness to dissent from accepted norms was linked to a group's innovation and effectiveness when there was also a sense of psychological safety (e.g., Dreu, 2002). Reliability was acceptable (α = .70).

Participants completed a 20-item Organizational Dissent Scale (Kassing, 1998) which measures whether and how employees express frustration and disagreement about workplace issues to three audiences: management (9-item Upward subscale; e.g., *I speak with my supervisor or someone in management when I question workplace decisions*),

co-workers (5-item Latent/Lateral subscale; e.g., *I let other employees know how I feel about the way things are done around here*), and non-work family and friends (6-item Displaced subscale; e.g., *I rarely voice my frustrations about workplace issues in front of my spouse/partner or non-work friends*). Participants responded on a 5-point Likert scale from 1 = *strongly disagree* to 5 = *strongly agree*. Construct validity has been shown via correlations with work engagement and intent to leave one's organization (Kassing, Piemonte, Goman, & Mitchell, 2012). Reliability was acceptable (αs = .91, .84, .88, respectively).

Participants completed the 9-item short-version of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006), with three 3-item subscales capturing vigor (e.g., *At my work, I feel strong and vigorous*), dedication (e.g., *I am proud of the work I do*), and absorption (e.g., *I am immersed in my work*). Participants responded on a 7-point Likert scale from 1 = *never* to 7 = *always/every day*. Reliability was acceptable for the vigor, dedication, and absorption subscales, respectively (αs = .89, .91, .86).

Participants completed the 16-item Oldenburg Burnout Inventory (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), with 8-item Disengagement (e.g., *It happens more and more often that I talk about my work in a negative way*) and Exhaustion (e.g., *After my work, I usually feel worn out and weary*) subscales. Participants responded to items from 0 = *strongly disagree* to 3 = *strongly agree*. Construct validity has been shown with evidence that people who stay versus leave their work organization can be differentiated by burnout scores (e.g., De Lange, De Witte, & Notelaers, 2008). Reliability was acceptable for the disengagement and exhaustion subscales, respectively (αs = .81, .82).

Participants completed the Twenty Item Values Inventory (TwIVI; Sandy, Gosling. Schwartz, & Koelkebeck, 2017), a brief version of the Schwartz 40-item Portrait Values Questionnaire (PVQ; Schwartz, 2003). Ten 2-item subscales assess the extent to which participants value 10 domains: self-direction, stimulation, hedonism, achievement, power, benevolence, universalism, conformity, tradition, and security. Participants responded on a 6-point Likert scale from 1 = *not at all like me* to 5 = *very much like me*. Construct validity has been shown via correlations with Big Five personality traits (e.g., Sandy et al., 2017) and Dark Triad traits (e.g., psychopathy, narcissism, and Machiavellianism were each positively related with power and achievement and negatively related with conformity; Jonason, Koehn, Bulyk, & Davis, 2019). Reliability was acceptable (αs = .71, .63, .68, .80, .87, .81, .84, .72, .65, .53 [in order presented above]).

2.3. Measures–study 2

Participants completed the 25-item Five Dimensional Curiosity Scale (Kashdan et al., 2018) with 11 additional social curiosity items and the Stress Tolerance items reverse scored as in Study 1.

Participants completed the 14-item Social Curiosity Scale (Renner, 2006) with separate 7 item subscales capturing General Social Curiosity (e.g., *When I meet a new person, I am interested in learning more about him/her*) and Covert Social Curiosity (e.g., *Every so often I like to stand at the window and watch what my neighbors are doing*). Participants rated items on a scale from 1 = *strongly disagree to* 4 = *strongly agree.* Reliability was acceptable (αs = .93, .88, respectively).

Participants completed the 16-item Interpersonal Curiosity Scale (Litman & Pezzo, 2007), which consisted of three subscales including curiosity about emotions (e.g., *observe people's expressions to figure out how they feel*), spying and prying (e.g., *feel comfortable asking about people's private lives*), and snooping (e.g., *love going into people's houses to see how they live*). Participants rated items on a scale of 1 = *definitely not true* to 5 = *very true*. Reliability was acceptable for subscales (αs = .84-.88).

Participants completed the 12-item Attitudes towards Gossip Scale (Litman & Pezzo, 2005), which asks about social values (e.g.. *Gossip is a good ice-breaker*) and moral values (e.g., *You should never mention rumors even if you think they are true* [reverse coded]). Participants rated items from 1 = *disagree strongly* to 5 = *agree strongly*. Reliability was acceptable (α = .91).

Participants completed the 20-item Tendency to Gossip Questionnaire (Nevo, Nevo & Derech-Zehavi, 1993), which measures how frequently people gossiped about other people's physical appearance (e.g., *I talk with friends about people's clothes*), achievement (e.g., *I talk with friends about other people's salaries*), social information (e.g., *I analyze with friends the compatibility of couples*), and sublimated gossip (e.g., *I read gossip columns in newspapers*). Participants rated the frequency of engaging in each behavior from 1 = *never* to 7 = *always*. Reliability was acceptable (α = .95).

Participants completed the 40-item Interpersonal Competency Questionnaire (Buhrmester, Furman, Wittenberg, & Reis, 1988) which measures how people handle different social situations (e.g., *Finding and suggesting things to do with new people who you find interesting and attractive* and *Revealing something intimate about yourself while talking with someone you're just getting to know*). Participants rated their level of comfort in each situation, from 1 = *I'm poor at this; I'd feel so uncomfortable and unable to hale this situation; I'd avoid it if possible* to 5 = *I am extremely good at this; I'd feel very comfortable and handle this situation very well*. Reliability was acceptable for same sex and other sex interactions (αs = .97, .98).

Participants completed the 30-item Social Anxiety Questionnaire (Caballo, Arias, Salazar, Irurtia, & Hofmann, 2015) that measures felt unease, stress, or nervousness in response to social situations (e.g., *Speaking in public* and *Asking someone attractive of the opposite sex for a date*). Participants rated items on a 5-point Likert scale from 1 = *not at all or very slightly* to 5 = *very high or extremely high*. Reliability was acceptable (α = .97).

Loneliness was measured using the 20-item UCLA Loneliness Scale (Russell, 1996). Sample items included *I feel alone* and *I feel like there is no one I can turn to*. Participants rated items on a 5-point Likert scale from 1 = *never* to 5 = *always*. Reliability was acceptable (α = .96).

Participants completed the 60-item Big Five Inventory-2 (BFI-2; Soto & John, 2017), to assess Extraversion, Agreeableness, Conscientiousness, Negative Emotionality (formerly Neuroticism), and Open-Mindedness (formerly Openness to Experience) and relevant lower-order facets. Extraversion includes: Sociability, Assertiveness, and Energy Levels. Agreeableness includes: Compassion, Respectfulness, and Trust. Conscientiousness includes: Organization, Productiveness, and Responsibility. Negative Emotionality includes Anxiety, Depression, and Emotional Volatility. Open-Mindedness includes: Aesthetic Sensitivity, Intellectual Curiosity, and Creative Imagination. Participants responded to each item using a 5-point Likert scale from 1 = *disagree strongly* to 5 = *agree strongly*. Reliability was acceptable (αs = .88-.93).

Participants completed the 22-item Intellectual Humility Scale (Krumrei-Mancuso, & Rouse, 2016) to assess beliefs about one's own and others' intellect. Items assess how participants deal with independence of intellect and ego (e.g., *I feel small when others disagree with me on topics that are close to my heart*), openness to revising their viewpoint (e.g., *I am open to revising my important beliefs in the face of new information*), respect for others viewpoints (e.g., *I can respect others even if I disagree with them in important ways*), and intellectual overconfidence (e.g., *My ideas are usually better than other people's ideas*). Participants rated agreement with each statement, on a scale of 1 = *strongly disagree* to 5 = *strongly agree*. Reliability was acceptable (α = .90).

Participants completed the Balanced Measure of Psychological Needs Scale (Sheldon & Hilpert, 2012), which measures satisfaction of needs for autonomy, competence, and belonging (Ryan & Deci, 2000). Participants responded to 18 items on a 5-point Likert scale from 1 = *strongly disagree* to 5 = *strongly agree*. Reliability was acceptable (αs = .87, .80, .80, respectively).

Identical to Study, 1, participants completed the Twenty Item Values Inventory (TwIVI; Sandy, Gosling, Schwartz, & Koelkebeck, 2017). Reliability was acceptable (αs = .70-.86).

2.4. Data analytic plan

Before understanding the nature of social curiosity and further validating the other four dimensions of curiosity, we began with personality structure analyses. We conducted an exploratory factor analysis (EFA) to determine the independence of overt and covert social curiosity. With two independent samples, we conducted EFA on both. Next, we included the final items selected for social curiosity into a model with the other four curiosity dimensions (Joyous Exploration, Deprivation Sensitivity, Stress Tolerance, and Thrill Seeking) for confirmatory factor analysis (CFA) models on both independent samples. For ease of interpretation, the factor analytic results of Studies 1 and 2 are reported together in the next section. To ensure we measured a trait-like construct, we tested the temporal stability of each subscale at 2 month and 8 month intervals. Finally, we examined the bivariate correlations between 5DCR dimensions and relevant constructs to evaluate the construct validity of the 4-item subscales.

3. Results

3.1. Exploratory factor analysis

A parallel analysis based on a factor analytic model was conducted on Sample 1 to test the number of dimensions present in the 16 initial social curiosity items. Parallel analysis uses simulation to correct for upward bias in eigenvalues due to sampling error. The magnitude of bias was based on the 95th percentile of 10,000 simulated eigenvalues. Two of the bias adjusted eigenvalues were greater than 1 (6.85 and 1.13), suggesting the presence of two factors (Glorfeld, 1995). To determine the nature of the factors and identify the best performing items, an exploratory factor analysis was conducted specifying two factors underlying the 16 items. The extraction method was unweighted least squares and the rotation criterion was (orthogonal) varimax. The two factors appeared to correspond to Overt and Covert Social Curiosity and together explained 54.8% of the item variance. Based on (1) greater face validity, (2) larger magnitude of the standardized focal loading, and the (3) smaller magnitude of the standardized cross loading, four items for each factor were retained.

An EFA with the final eight social curiosity items was conducted on both Sample 1 (English Workers) and Sample 2 (Online MTurk). The extraction method was unweighted least squares and the rotation criterion was (oblique) oblimin. In both samples, the two factors corresponded to Overt and Covert Social Curiosity. Table 2 presents the standardized factor loadings. In Samples 1 and 2, the factor correlation between the two Social Curiosity dimensions was .45 and .57, respectively.

3.2. Confirmatory factor analysis

After finalizing the items for both social curiosity subscales, we revisited the other four curiosity subscale items. We identified one item from each subscale that had the least face validity, did not map as well onto our conceptual understanding of curiosity, and/or exhibited the lowest factor loading. The item "I am always looking for experiences that challenge how I think about myself and the world" was removed from the Joyous Exploration subscale because of the lack of uniqueness to curiosity. The item "It frustrates me not having all the information I need" was removed from the Deprivation Sensitivity subscale because it did not incorporate a problem-solving element. The item "I cannot function well if I am unsure whether a new experience is safe" was removed from the Stress Tolerance subscale because functioning well is too broad to be useful. The item "The anxiety of doing something new makes me feel excited and alive" was removed from the Thrill Seeking subscale because many people had different answers depending on whether situations were chosen or forced upon. This trimming process led to four items per subscale, including the two social curiosity subscales, which together form The Five Dimensional Curiosity Scale Revised (5DCR).

A CFA with the final 24 items from the 5DCR was conducted on both Sample 1 and Sample 2. A correlated factor model was specified with no cross-loadings or covaried errors. The estimator was full information maximum likelihood to account for (the very little) item missing data. The Yuan-Bentler T2* chi-square test statistic and Huber-White adjusted standard errors were used to account for any item non-normality (i.e., MLR) (Yuan and Bentler, 2000). Table 3 presents the standardized factor loadings in each sample, which ranged from .62 to .90. The model fit in Sample 1 was $\chi 2$ (237) = 773.741, $p < .001$; TLI = .910; CFI = .922; RMSEA = .068 (90% CI: [.063, .074]); SRMR = .058. The model fit in Sample 2 was $\chi 2$ (237) = 888.827, $p < .001$; TLI = .892; CFI = .908; RMSEA = .077 (90% CI: [.072, .083]); SRMR = .053.

Modification indices suggested various cross-loadings and covaried errors; however, given their tendency to not replicate across samples, the original correlated factor model was retained (Gerbing & Anderson, 1984; MacCallum, Roznowski, & Necowitz, 1992). A second-order or bifactor model was considered; however, the factor correlations did not suggest the presence of a dominant general factor (Table 4). For example, the correlation between deprivation sensitivity and stress tolerance was close to zero and a weak correlation emerged between stress tolerance and covert social curiosity. This pattern of factor correlations is evidence against the use of a total score for the 5DCR.

3.3. Descriptive statistics and reliability

The mean item score and standard deviation for each of the subscales are reported in Table 5. The reliability of the 5DCR unit-weighted observed subscale scores was assessed via omega coefficients and are also in Table 5. Omega coefficients are model-based indices of internal consistency based on the CFA model results (McNeish, 2018). In this case, they are interpreted similar to alpha coefficients, but do not make the assumption of equal factor loadings. All omega coefficients across both samples were greater than .80, indicating strong internal

Table 2
EFA standardized factor loadings.

Sample	Study 1 English Workers		Study 2 Online MTurk	
Item	**Overt**	**Covert**	**Overt**	**Covert**
I ask a lot of questions to figure out what interests other people.	**.867**	-.068	**.696**	-.008
When talking to someone who is excited, I am curious to find out why.	**.736**	.114	**.842**	.031
When talking to someone, I try to discover interesting details about them.	**.850**	-.014	**.910**	-.067
I like finding out why people behave the way they do.	**.485**	.193	**.745**	.113
When other people are having a conversation, I like to find out what it's about.	.057	**.851**	.078	**.837**
When around other people, I like listening to their conversations.	-.053	**.933**	-.026	**.900**
When people quarrel, I like to know what's going on.	-.004	**.849**	-.102	**.783**
I seek out information about the private lives of people in my life.	.128	**.550**	.158	**.602**

Notes. Overt = Overt Social Curiosity; Covert = Covert Social Curiosity.

Table 3
CFA standardized factor loadings.

Subscale	Item	Study 1 English Workers	Study 2 Online MTurk
Joyous Exploration	I view challenging situations as an opportunity to grow and learn.	.747	.763
	I seek out situations where it is likely that I will have to think in depth about something.	.682	.774
	I enjoy learning about subjects that are unfamiliar to me.	.849	.838
	I find it fascinating to learn new information.	.832	.819
Deprivation Sensitivity	Thinking about solutions to difficult conceptual problems can keep me awake at night.	.643	.759
	I can spend hours on a single problem because I just can't rest without knowing the answer.	.804	.869
	I feel frustrated if I can't figure out the solution to a problem, so I work even harder to solve it.	.673	.788
	I work relentlessly at problems that I feel must be solved.	.731	.791
Stress Tolerance	The smallest doubt can stop me from seeking out new experiences.	.816	.745
	I cannot handle the stress that comes from entering uncertain situations.	.841	.823
	I find it hard to explore new places when I lack confidence in my abilities.	.831	.818
	It is difficult to concentrate when there is a possibility that I will be taken by surprise.	.815	.836
Overt Social	I ask a lot of questions to figure out what interests other people.	.629	.690
	When talking to someone who is excited, I am curious to find out why.	.800	.861
	When talking to someone, I try to discover interesting details about them.	.811	.866
	I like finding out why people behave the way they do.	.833	.806
Covert Social	When other people are having a conversation, I like to find out what it's about.	.893	.895
	When around other people, I like listening to their conversations.	.905	.894
	When people quarrel, I like to know what's going on.	.833	.709
	I seek out information about the private lives of people in my life.	.620	.656
Thrill Seeking	Risk-taking is exciting to me.	.868	.864
	When I have free time, I want to do things that are a little scary.	.847	.881
	Creating an adventure as I go is much more appealing than a planned adventure.	.754	.728
	I prefer friends who are excitingly unpredictable.	.750	.757

Table 4
CFA factor correlations.

Factor	1	2	3	4	5	6
1. Joyous Exploration	-	.640	.475	.582	.152	.402
2. Deprivation Sensitivity	.628	-	.034	.415	.225	.302
3. Stress Tolerance	.268	-.195	-	.199	-.162	.284
4. Overt Social Curiosity	.666	.515	.013	-	.452	.294
5. Covert Social Curiosity	.159	.249	-.332	.565	-	.184
6. Thrill Seeking	.338	.319	.074	.381	.233	-

Notes. Lower Triangle = Study 1 English Workers sample; Upper Triangle = Study 2 Online MTurk sample

consistency of the items within each subscale. The reliability of the 5DCR unit-weighted observed subscale scores in Sample 1 was also assessed via test-retest correlations (see Table 5). The test-retest correlations across 2 month and 8 month intervals ranged from .61 to .79, indicating strong reliability of trait-like measures.

3.4. Construct validity

The validity of the 5DCR unit weighted observed subscale scores was assessed via correlations with theoretically related or unrelated measures. In direct comparisons between correlations (Table 6), Overt Social Curiosity could be distinguished from Covert Social Curiosity by large positive correlations with measures of general interpersonal curiosity, moderately large positive correlations with open-mindedness, extraversion, agreeableness, self-endorsed social competence, and low loneliness, social anxiety, and negative emotionality. Covert Social Curiosity exhibited large positive correlations with measures of snooping, prying, surreptitious social behavior, and tendencies to gossip.

Joyous Exploration had the strongest relations of the curiosity dimensions to work-related curiosity, wisdom (specifically, the ability to consider others' perspectives and intellectual humility), innovation, a willingness to dissent from social norms and express contradictory opinions to supervisors and managers, a workplace promotion focus, and the valuing of self-direction and universalism (see Table 7). Joyous Exploration also showed the strongest relations with open-mindedness, extraversion, the intellectual humility to revise one's viewpoints in conflicts, and valuing of self-direction (see Table 8).

Stress Tolerance had the strongest relations with dispositional mindfulness, work engagement (vigor, dedication, and absorption) and low levels of work burnout; in addition, it was moderately related to work-related curiosity and a willingness to dissent from social norms and express contradictory opinions to supervisors (Table 7). Stress Tolerance also showed the strongest inverse relation with negative emotionality and positive associations with extraversion, conscientiousness, respectfulness, trust, satisfaction of psychological needs, and the humility to separate intellect and ego (Table 8).

Overt Social Curiosity had the strongest relations with wisdom (specifically, the search for compromise, adopting others' perspectives, and recognition of change) and the valuing of benevolence (Table 7). Overt Social Curiosity also showed the strongest relations with agreeableness, sociability, and the valuing of benevolence and universalism (Table 8).

Table 5
Reliability coefficients.

Sample Subscale	Mean (Standard Deviation) Study 1 English Workers	 Study 2 OnlineMTurk	Omega Coefficient Study 1 English Workers	 Study 2 OnlineMTurk	Test-retest 2 months	 8 months
Joyous Exploration	5.03 (1.35)	5.61 (1.06)	.856	.870	.748	.772
Deprivation Sensitivity	4.54 (1.31)	4.93 (1.21)	.803	.879	.620	.611
Stress Tolerance	4.36 (1.61)	4.85 (1.57)	.896	.882	.707	.709
Overt Social Curiosity	4.86 (1.39)	5.13 (1.20)	.851	.880	.700	.733
Covert Social Curiosity	4.16 (1.55)	4.31 (1.61)	.888	.869	.735	.727
Thrill Seeking	3.07 (1.46)	3.50 (1.61)	.882	.882	.793	.779

Notes. Test-retest data are from Study 1.

Table 6
Construct validity of the 5DCR social curiosity scales (Study 2).

Outcome	*r* with Overt Social Curiosity	*r* with Covert Social Curiosity	Test of difference between correlations
	r	*r*	
Social Curiosity Scale - General	.65*	.44*	4.35*
Interpersonal Curiosity– Curious about emotions	.56*	.29*	4.83*
Big Five Inventory-2 – Open Mindedness	.47*	.05	6.60*
Interpersonal Competency Questionnaire – Same Sex Friend	.40*	.12	4.27*
Big Five Inventory-2 - Extraversion	.39*	.11	4.32*
Interpersonal Competency Questionnaire – Other Sex Friend	.38*	.05	4.93*
Big Five Inventory-2 - Agreeableness	.37*	-.01	5.71*
UCLA Loneliness Scale	-.31*	-.02	-4.29*
Intellectual Humility Scale - Total	.21*	-.14*	5.08*
Big Five Inventory-2 – Negative Emotionality	-.20*	.12	-4.64*
Social Anxiety Questionnaire	-.20*	.11	-4.50*
Big Five Inventory-2 - Conscientiousness	.15*	-.14*	4.19*
Social Curiosity Scale - Covert	.27*	.72*	-9.04*
Interpersonal Curiosity– Snooping	.41*	.59*	-3.50*
Interpersonal Curiosity– Spying and prying	.22*	.55*	-5.70*
Tendency to Gossip Questionnaire	.22*	.49*	-4.51*
Attitudes Toward Gossip Scale	-.00	.42*	-6.42*

Note. Results for the test of differences occurred by converting correlation coefficients into a *z*-score using Fisher's *r*-to-*z* transformation and then comparing them (formula 2.8.5; Cohen & Cohen, 1983, p. 54). * = correlation coefficients significant at .01 level.

Covert Social Curiosity had the strongest relations with a workplace prevention focus, a tendency to express disagreement about work issues with co-workers and non-work family and friends (but not supervisors), and the valuing of achievement. In addition, there was an inverse relationship with dispositional mindfulness (Table 7).

Deprivation Sensitivity had the strongest relations with the valuing of security, and was positively correlated with work-related curiosity, wisdom, both a promotion and prevention focus in the workplace, and the valuing of self-direction and stimulation (Table 7). Deprivation Sensitivity had the strongest inverse relation with the humility to resist overconfidence, a weak positive relation with the valuing of security (Table 8), and a moderate positive relation with open-mindedness.

4. Discussion

We described the refinement of a new brief self-report measure intended to assess individual differences in five distinct dimensions of curiosity. We used the subscales to predict criterion variables that capture a comprehensive approach to basic personality dimensions, human values, approach motivation and behaviors in the workplace, psychological need satisfaction, and psychological strengths. Despite reducing the scale length, we found stronger evidence for the factor structure, temporal stability, and construct validity of the five dimensions of curiosity than the original version (5DC; Kashdan et al., 2018). With a more nuanced approach to measuring social curiosity, we found

Table 7
Construct validity for 5DCR dimensions (Study 1).

Personality	JE	DS	ST	TS	Overt SC	Covert SC
Work-Related Curiosity Scale	.66*	.36*	.23*	.22*	.37*	.04
Mindfulness Attention Awareness Scale	.22*	-.08	.43*	-.07	-.05	-.23*
Innovative Behavior	.38*	.22*	.17*	.22*	.30*	.10
Wise Reasoning Scale – Considering Others Perspectives	.43*	.24*	.17*	.05	.42*	.11
Wise Reasoning Scale – Intellectual Humility	.39*	.22*	.18*	-.01	.33*	.04
Wise Reasoning Scale – Search for Compromise	.31*	.20*	.14	-.01	.35*	.07
Wise Reasoning Scale – Adopting Others Perspectives	.37*	.31*	.02	.16	.42*	.16*
Wise Reasoning Scale – Recognition of Change	.41*	.17*	.19*	.09	.42*	.08
Work Regulatory Focus - Promotion	.45*	.26*	.18*	.44*	.32*	.15
Work Regulatory Focus - Prevention	.05	.15	-.16*	-.14	.22*	.25*
Willingness to Dissent	.30*	.15	.21*	.35*	.12	-.09
Organizational Dissent – Upward/Articulated	.27*	.09	.36*	.24*	.18*	-.06
Organizational Dissent – Lateral/Latent	.02	.15	-.12	.23*	.09	.23*
Organizational Dissent – Displaced	.05	.26*	-.12	.07	.29*	.37*
Work Engagement - Vigor	.29*	.06	.24*	.22*	.21*	.03*
Work Engagement - Dedication	.36*	.10	.27*	.16*	.24*	-.00
Work Engagement - Absorption	.30*	.13	.20*	.18*	.25*	.02
Burnout - Exhaustion	-.25*	.03	-.35*	-.09	-.15	.11
Burnout - Disengagement	-.25*	.03	-.35*	-.09	-.13	.07
Schwartz Value Survey						
Self-direction	.59*	.32*	.24*	.26*	.41*	.04
Stimulation	.49*	.24*	.27*	.67*	.37*	.10
Hedonism	.19*	.12	.09	.39*	.26*	.16
Achievement	.05	.21*	-.19	.14	.22*	.26*
Power	.23*	.23-	-.03	.27*	.19*	.16*
Benevolence	.29*	.17*	.07	-.04	.38*	.12
Universalism	.32*	.14	.12	.02	.27*	.03
Conformity	.06	.08	-.15	-.09	.11	.09
Tradition	.02	.04	-.08	.07	.05	.07
Security	.16*	.17*	-.10	-.10	.18*	.12

Notes. JE = Joyous Exploration; DS = Deprivation Sensitivity; ST = Stress Tolerance; TS = Thrill Seeking; SC = Social Curiosity. * = significant at the .01 level.

Table 8
Construct validity for 5DCR dimensions (Study 2).

Personality	JE	DS	ST	TS	Overt SC	Covert SC
BFI-2 - Open Mindedness	.63*	.40*	.33*	.25*	.47*	.05
Facet: Intellectual Curiosity	.64*	.38*	.33*	.20*	.46*	.08
Facet: Aesthetic Sensibility	.44*	.29*	.19*	.17*	.40*	.06
Facet: Creative Imagination	.55*	.36*	.35*	.29*	.36*	-.00
BFI-2 - Extraversion	.49*	.23*	.49*	.41*	.39*	.11
Facet: Sociability	.37*	.14*	.38*	.36*	.36*	.14*
Facet: Assertiveness	.39*	.24*	.38*	.32*	.28*	.05
Facet: Energy Level	.48*	.21*	.48*	.36*	.34*	.08
BFI-2 - Negative Emotionality	-.36*	.02	-.59*	-.21*	-.20*	.12*
Facet: Anxiety	-.32*	.04	-.56*	-.26*	-.15*	.12
Facet: Depression	-.38*	.09	-.55*	-.22*	-.24*	.05
Facet: Emotional Volatility	-.26*	.02	-.47*	-.06	-.15*	.17*
BFI-2 - Agreeableness	.27*	-.01	.32*	-.05	.37*	-.01
Facet: Compassion	.25*	.09	.20*	-.11	.40*	.03
Facet: Respectfulness	.16*	-.05	.25*	-.19*	.22*	-.08
Facet: Trust	.26*	-.06	.35*	.11	.30*	.01
BFI-2 - Conscientiousness	.18*	.11	.27*	-.15*	.15*	-.14*
Facet: Organization	.08	.08	.10	-.14*	.10	-.08
Facet: Productiveness	.29*	.17*	.36*	-.03	.20*	-.14*
Facet: Responsibility	.12	.04	.25*	-.23*	.10	-.14*
Satisfaction of Need for Autonomy	.29*	.00	.38*	.12	.17*	-.06
Satisfaction of Need for Competence	.44*	.19*	.52*	.19*	.22*	-.05
Satisfaction of Need for Belonging	.36*	.08	.42*	.11	.29*	.06
Intellectual Humility – Independence of Intellect and Ego	.27*	-.06	.45*	.10	.11	-.30*
Intellectual Humility – Openness to Revising Ones Viewpoints	.19*	.14*	.08	.02	.17*	.03
Intellectual Humility – Lack of Intellectual Overconfidence	-.07	-.16*	.06	-.15*	.06	-.05
Values						
Self-direction	.60*	.40*	.27*	.30*	.38*	.07
Stimulation	.55*	.25*	.36	.68*	.32*	.15*
Hedonism	.29*	.14*	.11	.39*	.17*	.19*
Achievement	.21*	.19*	.02	.27*	.08	.25*
Power	.24*	.18*	.10	.31*	.14*	.17*
Benevolence	.33*	.17	.20*	-.01	.43*	.13
Universalism	.30*	.13	.11	-.02	.32*	.03
Conformity	-.00	.03	-.13	-.11	.04	.09
Tradition	.01	.05	-.02	-.05	.00	.03
Security	.12	.14*	.06	-.04	.11	-.00

Notes. JE = Joyous Exploration; DS = Deprivation Sensitivity; ST = Stress Tolerance; TS = Thrill Seeking; SC = Social Curiosity. BFI = Big Five Inventory. * = significant at the .01 level.

clear evidence for two distinct dimensions. Overt Social curiosity was linked to healthy psychological outcomes including open-mindedness, extraversion, agreeableness, low negative emotionality, interpersonal competencies, and low levels of loneliness. Covert social curiosity, alternatively, was linked to a strong preference to engage in gossip, snooping, spying, prying, a motivation to avoid errors and mistakes in the workplace, and tendency to complain and disagree about work to everyone except supervisors. We made an error in failing to distinguish these separate dimensions of Social Curiosity in the 5DC. The pattern of results supports the value of using the 5DCR over its predecessor as an empirical tool for in future research.

In Study 1, each curiosity dimension was highly stable up to 8 months later, meeting the criteria of a personality disposition. Our work extends prior research suggesting curiosity is moderately related to other psychological strengths such as intellectual humility and wisdom (e.g., Leary et al., 2017). Not all dimensions are relevant to these strengths. For instance, Overt Social Curiosity and Joyous Exploration were the strongest predictors of wise reasoning in conflict-laden situations in terms of intentionally seeking compromise, considering other people's perspectives, a willingness to adopt other people's perspectives, and the ability to discern how situations are unfolding; dimensions such as Stress Tolerance had no association. As for intellectual humility, Stress Tolerance and Joyous Exploration were the strongest predictors of being able to remove one's ego from a problem, whereas Covert Social Curiosity predicted ego entanglements. It is only by assessing separate dimensions, instead of collapsing them into a single score, that researchers and practitioners can truly understand the relevance of curiosity to psychological functioning and behavior.

Study 2 incorporated a different set of measures to understand the psychological correlates of being a curious person. Except for Covert Social Curiosity, each curiosity dimension was positively related to the core elements of open mindedness (namely, intellectual curiosity, aesthetic sensibility, and creative imagination) and extraversion (namely, sociability, assertiveness, and high energy). The use of a broader bandwidth approaches to the Big Five (Soto & John, 2017) allowed for a better understanding of how curiosity operates within the taxonomy of basic personality traits (e.g., Kashdan et al., 2009; Mussel, 2013). Extending prior work on curiosity and well-being (e.g., Gallagher & Lopez, 2007; Kashdan & Steger, 2007; Park et al., 2004), we uncovered particular links between curiosity dimensions and the satisfaction of psychological needs. Being high in Joyous Exploration, Stress Tolerance, and Overt Social Curiosity predicted feelings of autonomy, competence, and belonging; being high in Deprivation Sensitivity was only linked to satisfying the need for competence.

Both studies measured values, allowing for a replicated pattern to emerge: people scoring high on Joyous Exploration and Deprivation Sensitivity primarily valued self-direction, people scoring high on Thrill Seeking primarily valued stimulation and hedonism, people scoring high in Overt Social Curiosity primarily valued benevolence and an appreciation and tolerance of all people (universalism), whereas a clear set of values or standards failed to emerge for the other dimensions. The link to values offers insight into what different types of curious people rely on to guide their goal-directed actions and evaluation of particular behaviors, policies, events, and people. Some curiosity dimensions are more closely aligned with self-gratification, whereas other dimensions are more about personal growth and enhancing the welfare of others (Schwartz, 1992, 1996). A better clarification of values allows a person to be more intentional about their decisions, choosing paths that are more likely to bring fulfillment. Our work initiates a new line of questions to understand types of curious people that are oriented toward different ways to satisfy their needs, and detect and acquire meaning and purpose in life.

All of the interpretative caveats for studies employing self-report questionnaires are relevant to the presented research program. In addition, there were a few demographic differences between our samples. As expected from the recruitment approach, the English speaking working adult sample possessed more individuals working full-time outside of the home than the MTurk sample, and the English workers sample was slightly younger with more individuals in long-term relationships outside of marriage. What these small demographic differences mean for interpreting the results can only be speculated on. We might expect the various dimensions of curiosity to have stronger associations with work-related benefits in self-chosen, full-time work environments. After all, there is greater exposure to novelty and uncertainty when work-related tasks are dependent on the behavior and demands of various colleagues and managers. Some research suggests that pleasurable engagement is greater during work than moments of leisure (e.g., Csikszentmihalyi & LeFevre, 1989), offering the possibility that curiosity might be activated more often and lead to greater psychological benefits during work situations. Of course, this is an empirical question, as people endorsing greater dispositional curiosity might be more adept at finding and relishing the unfamiliar in seemingly familiar environments.

Instead of viewing curiosity as a universal virtue or character

strength (Peterson & Seligman, 2004), there is merit in exploring how various dimensions of curiosity could be healthy or unhealthy depending on the application. Thrill Seeking and Covert Social Curiosity are often linked to disadvantageous outcomes such as unwanted negative emotional experiences and impulsive decision-making (e.g., Renner, 2006; Zuckerman, 1994). When highly curious people are observed by friends and strangers, some of the qualities pinpointed such as rebelliousness, non-conformist thinking, and the tendency to conduct interviews instead of two-sided conversations, can lead to healthy change or difficult social interactions (Kashdan, Sherman, Yarbro, & Funder, 2013). Future work should explore the consequences of when and how particular dimensions of curiosity are underplayed and overplayed.

Curiosity has been described as a central human motivation (Maslow, 1943), a universal human strength (Peterson & Seligman, 2004), and a pillar leading to human achievement (von Stumm et al., 2011). There is a pressing need to better understand what curiosity is, what curiosity offers, whether curiosity is malleable, and how to best enhance curiosity. Our comprehensive, multifaceted scale offers an opportunity to ask and answer nuanced questions about the causes, nature, and consequences of curiosity. Synthesizing decades of theory and empirical study, the present work provides a compelling case for studying curiosity as a series of distinct dimensions.

CRediT authorship contribution statement

Todd B. Kashdan: Conceptualization, Data curation, Formal analysis, Writing - original draft, Writing - review & editing. **David J. Disabato:** Conceptualization, Data curation, Formal analysis, Writing - original draft, Writing - review & editing. **Fallon R. Goodman:** Conceptualization, Data curation, Formal analysis, Writing - review & editing. **Patrick E. McKnight:** Conceptualization, Formal analysis, Writing - review & editing.

Declaration of Competing Interest

The authors have no financial conflict of interest.

Appendix

Five-Dimensional Curiosity Scale Revised (5DCR)

Below are statements people often use to describe themselves. Please use the scale below to indicate the degree to which these statements accurately describe you. There are no right or wrong answers.

1 – Does not describe me at all
2 – Barely describes me
3 – Somewhat describes me
4 – Neutral
5 – Generally describes me
6 – Mostly describes me
7 – Completely describes me

Joyous Exploration:

1 I view challenging situations as an opportunity to grow and learn.
2 I seek out situations where it is likely that I will have to think in depth about something.
3 I enjoy learning about subjects that are unfamiliar to me.
4 I find it fascinating to learn new information.

Deprivation Sensitivity:

1 Thinking about solutions to difficult conceptual problems can keep me awake at night.
2 I can spend hours on a single problem because I just can't rest without knowing the answer.
3 I feel frustrated if I can't figure out the solution to a problem, so I work even harder to solve it.
4 I work relentlessly at problems that I feel must be solved.

Stress Tolerance: (entire subscale reverse-scored)

1 The smallest doubt can stop me from seeking out new experiences.
2 I cannot handle the stress that comes from entering uncertain situations.
3 I find it hard to explore new places when I lack confidence in my abilities.
4 It is difficult to concentrate when there is a possibility that I will be taken by surprise.

Thrill Seeking:

1 Risk-taking is exciting to me.
2 When I have free time, I want to do things that are a little scary.
3 Creating an adventure as I go is much more appealing than a planned adventure.
4 I prefer friends who are excitingly unpredictable.

Social Curiosity:
Overt Social Curiosity

1 I ask a lot of questions to figure out what interests other people.
2 When talking to someone who is excited, I am curious to find out why.
3 When talking to someone, I try to discover interesting details about them.
4 I like finding out why people behave the way they do.

Covert Social Curiosity

1 When other people are having a conversation, I like to find out what it's about.
2 When around other people, I like listening to their conversations.
3 When people quarrel, I like to know what's going on.
4 I seek out information about the private lives of people in my life.

Scoring instructions:

Compute the average item score for each dimension and analyze separately (reverse score Stress Tolerance items).

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