Egos Inflating Over Time: A Cross-Temporal Meta-Analysis of the Narcissistic Personality Inventory

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ABSTRACT A cross-temporal meta-analysis found that narcissism levels have risen over the generations in 85 samples of American college students who completed the 40-item forced-choice Narcissistic Personality Inventory (NPI) between 1979 and 2006 (total $n = 16{,}475$). Mean narcissism scores were significantly correlated with year of data collection when weighted by sample size ($\beta = .53$, $p < .001$). Since 1982, NPI scores have increased 0.33 standard deviation. Thus, almost two-thirds of recent college students are above the mean 1979–1985 narcissism score, a 30% increase. The results complement previous studies finding increases in other individualistic traits such as assertiveness, agency, self-esteem, and extraversion.

It is common for older people to complain about "kids these days," describing the younger generation as self-centered, entitled, arrogant, and/or disrespectful. As a bromide set in a particular time, it is difficult to tell whether these perceptions are a function of age (maybe younger people are more self-centered than older people simply because they are young) or of generation (maybe the younger generation actually is more self-centered than the older generation was at the same age). It is also possible that older people will complain about the younger generation even if young people are actually less self-centered than they were when they were young themselves.

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To study generational change scientifically, it is necessary to separate the effects of generation from age and to measure traits using psychometrically sound questionnaires. This is best accomplished through the time-lag method, which analyzes samples of people of the same age at different points in time. For example, college students from the 1980s can be compared with college students from the 1990s and 2000s. All samples are of the same age, but are from different generations (otherwise known as *birth cohorts*). Birth cohort is a useful proxy for the sociocultural environment of different time periods (Stewart & Healy, 1989; Twenge, 2000). For example, children growing up in the 1970s were exposed to a fundamentally different culture than children growing up in the 1990s. The logic underlying this approach is similar to that used to assess the self-conceptions and personality traits of individuals across different world regions (e.g., Choi, Nisbett, & Norenzayan, 1999; Heine & Lehman, 1997; Markus & Kitayama, 1991), except that individual differences between birth cohorts (instead of cultural groups) are assessed. In support of this idea, several previous studies have found strong birth cohort differences in characteristics such as anxiety, self-esteem, locus of control, and sexual behavior (Twenge, 2000; Twenge & Campbell, 2001; Twenge, Zhang, & Im, 2004; Wells & Twenge, 2005, respectively). These studies used meta-analysis to locate samples of college students and children who completed the same psychological questionnaires at different points in historical time. The correlation between mean scores and the year the data were collected were then analyzed, using a method known as cross-temporal meta-analysis (e.g., Twenge, 2000).

The present study uses cross-temporal meta-analysis to examine changes in scores on the Narcissistic Personality Inventory, or NPI (Raskin & Hall, 1979, 1981; Raskin & Terry, 1988). The NPI is the most widely used measure of narcissistic personality in the general population. The NPI is not designed as a clinical instrument for measuring narcissistic personality disorder (NPD), and there is no cut-off score for clinically high narcissism (Foster & Campbell, 2007). Narcissism is characterized first and foremost by a positive and inflated view of the self, especially on agentic traits (e.g., power, importance, physical attractiveness: e.g., Campbell, Rudich, & Sedikides, 2002; John & Robins, 1994). Second, narcissism is associated with social extraversion, although people high in narcissism have relatively little interest in forming warm, emotionally intimate

bonds with others (e.g., Campbell, 1999; Carroll, 1987). Third, narcissism involves a wide range of self-regulation efforts aimed at enhancing the self. These efforts can range from attention seeking (Buss & Chiodo, 1991) and taking credit from others (e.g., Campbell, Reeder, Sedikides, & Elliot, 2000; Farwell & Wohlwend-Lloyd, 1998; Rhodewalt & Morf, 1995) to seeking high-status romantic partners (Campbell, 1999) and opportunities to achieve public glory (Wallace & Baumeister, 2002). Those high in narcissism also lash out with aggression when they are rejected or insulted (Bushman & Baumeister, 1998; Twenge & Campbell, 2003). Many of these behaviors can potentially be explained by the link between narcissism and impulsivity (Vazire & Funder, 2006). In a sense, narcissism can be conceptualized as a self-regulating system, where self-esteem and enhancement are sought through a variety of social means but with little regard for the consequences borne by others (for reviews, see Campbell, Brunell, & Finkel, 2006; Morf & Rhodewalt, 2001).

The NPI is ideal for a cross-temporal meta-analysis assessing changes in narcissism. First, it is reliable, well validated, and widely used. Second, the NPI is somewhat protected from social desirability influences through its use of forced-choice dyads, and, perhaps as a result, is not correlated with measures of social desirability (Watson, Grisham, Trotter, & Biderman, 1984). For each of the 40 forced-choice dyads on the NPI, participants choose either the narcissistic response (e.g., ''I can live my life anyway I want to'') or the non-narcissistic response (e.g., ''People can't always live their lives in terms of what they want''). The 40 items are summed together. Higher scores indicate higher levels of narcissism.

Previous Literature

Most previous studies suggest that narcissistic traits should increase with the generations. Several authors have argued that American culture has increasingly emphasized individualism (e.g., Fukuyama, 1999; Seligman, 1990; Twenge, 2006). Perhaps as a result, previous cross-temporal meta-analyses demonstrate a clear rise in individualistic traits. Between the 1970s and the 1990s, both college men and women scored higher on the agentic traits measured by the Bem Sex Role Inventory M scale, such as ''independent,'' ''individualistic, particular to me,'' and ''leadership ability'' (Twenge, 1997). College

women and—on some scales—college men scored higher on assertiveness measures between the 1970s and the 1990s (Twenge, 2001b), and both sexes increased in extraversion (Twenge, 2001a). College students scored higher on the Rosenberg Self-Esteem Scale between the 1960s and the 1990s, and children scored higher on the Coopersmith Self-Esteem Inventory between the 1980s and the 1990s (Twenge & Campbell, 2001). Agentic traits, assertiveness, extraversion, and self-esteem are all positively correlated with narcissism (e.g., Campbell et al., 2002). A study of changes in personality with age development shows that younger cohorts increase with age more than older cohorts in social dominance but also in agreeableness and conscientiousness over the young adulthood years between 18 and 40 (Roberts, Walton, & Viechtbauer, 2006). However, this meta-analysis examined personality changes with age instead of mean levels by cohort, so it is not clear how the generations differed in mean levels of these traits.

Even more directly related to narcissism, an analysis of teenagers' MMPI responses showed that in the 1950s, only 12% agreed with the statement "I am an important person." By the late 1980s, 80% agreed (Newsom, Archer, Trumbetta, & Gottesman, 2003). From the 1960s to the 1990s, agreement with California Psychological Inventory items such as "I have often met people who were supposed to be experts who were no better than I"; "I would be willing to describe myself as a pretty 'strong' personality"; and "I have a natural talent for influencing people" (also an NPI item) increased (Gough, 1991; cited in Roberts & Helson, 1997).

In addition, a large ($n = 3{,}445$) cross-sectional study of NPI responses found that younger people were more narcissistic than older people, with a significant negative correlation between NPI scores and age (Foster, Campbell, & Twenge, 2003). This difference could reflect developmental changes in narcissism with age, generational shifts in narcissism, or both. A time-lag study like the one we undertake here is necessary to determine if NPI scores have increased (or decreased) over the generations.

Although most evidence points to increases in narcissism over the generations, an alternative model suggests a decrease in narcissism. Generational theorists Howe and Strauss (1993, 2000; Strauss & Howe, 1991) describe Baby Boomers (in college early 1960s to early 1980s) as inner fixated and self-absorbed; they specifically use the word "narcissistic" in their description (Strauss & Howe, 1991, pp.

56–57, 79, 302). In contrast, they portray Generation X (in college mid-1980s to late-1990s), as "lacking ego strength" and having "low self-esteem" (Howe & Strauss, 1993; Strauss & Howe, 1991, p. 323). Finally, they describe the "Millennials" (in college early 2000s to late 2010s, sometimes called "GenY") as outer-fixated, group-oriented, and civically responsible. "Are they self-absorbed? No. They're cooperative team players," say Howe and Strauss (2000, p. 8). They continue, "Individualism and the search for inner fulfillment are all the rage for many Boomer adults, but less so for their kids, [who are] not as eager to grow up putting self ahead of community the way their parents did" (p. 237). However, these descriptions are not based on empirical data collection. Although Strauss and Howe's portrayal of generations includes many traits that are not related to narcissism, the descriptions above suggest that Baby Boomers should be the highest in narcissism, GenXers the lowest, and "Millennials" either just as low or even lower (as Strauss and Howe specifically say that they are *not* self-absorbed). Thus, their characterization of generations suggests that narcissism decreased among college students between the 1980s and the 2000s, or, at the very least, stayed steady after the Baby Boomers left college in the mid-1980s.

Overview

This article presents a cross-temporal meta-analysis of American college students' responses to the 40-item, forced-choice version of the NPI. This analysis will examine the correlation between NPI mean scores and the year the data were collected, showing how narcissism levels have changed over the generations.

The issue of changing college populations is an important concern for studies that examine college student samples across time. However, college populations have not changed as much as one might think. Socioeconomic status has not changed: The median income of college students' parents, when adjusted for inflation, did not vary by more than $3,000 between 1985 and 2004 (U.S. Bureau of the Census, 2006). The racial composition of college student samples has differed only slightly over this time period. Black students earned 6% of bachelor's degrees in 1985 and now earn about 9%; Asians increased from 3% to 7%; and Hispanics increased from 3% to 7%. Although these represent significant improvements for these specific racial groups, these shifts do not dramatically change the racial

makeup of college samples, which are still overwhelmingly White. In addition, the college enrollment of high school graduates changed only a few percentage points over this time, with 58% enrolling in college in 1985 and 64% in 2003 (U.S. Bureau of the Census, 2006). An increasing number of women entered college, though the change was slight during this time period: 53% of college students were female in 1985 compared to 57% in 2003. In short, demographic changes in college student samples have been minimal during the time period covered by this study. In addition, four previous meta-analyses found very similar patterns of birth cohort changes in college student and child samples (Twenge, 2000, 2001b; Twenge & Im, 2007; Twenge et al., 2004). Because child samples are not as selective as college samples and do not experience enrollment shifts with time, the similar results suggest that the small changes in the composition of college populations are not significant confounds in birth cohort analyses.

METHOD

Literature Search

Studies were primarily located using the Web of Knowledge citation index. The Web of Knowledge is an extensive database, including virtually all journals in the social sciences, biological and physical sciences, and medicine. We searched the citation index for articles that cited one of the original sources of the NPI (Raskin & Hall, 1979, 1981; Raskin & Terry, 1988). We also gathered unpublished means by posting a message to the Society for Personality and Social Psychology Listserv (spsp-discuss @stolaf.edu) asking for NPI means that fit the criteria outlined below, and we included unpublished means from our labs.

Inclusion Rules

Possible data points for the analysis were included or excluded on the basis of specific inclusion rules. To be included in the analysis, a study had to meet the following criteria: (a) participants were undergraduates at conventional 4-year institutions (e.g., not 2-year colleges, not military academies); (b) participants were attending college in the United States; (c) means were reported for unselected groups of students, not those chosen for scoring high or low on the NPI or another measure or singled

out for being maladjusted, clients at a counseling center, and so on; (d) samples were not more than 79% female or 79% male;[1] and (e) the study used the 40-item forced-choice version of the NPI. The 40-item forced-choice version is by far the most common version of the NPI used by researchers, so it yielded the most data. Other versions of the NPI include different items and produce different means; one of the requirements of cross-temporal meta-analysis is that the means are from the same measure so they can be directly compared across time. In addition, the 40-item NPI is more internally reliable than other versions; when Raskin and Terry (1988) created the 40-item scale, they eliminated the 14 items from the original 54-item scale that did not correlate with the scale's primary factors.

When e-mail addresses could be located, we e-mailed the authors of published articles who provided means on the NPI but did not identify the year of data collection or provide single-sex means and asked for that information. When the exact year was not available, year of data collection was coded as 2 years prior to publication, as in previous meta-analyses (e.g., Oliver & Hyde, 1993). In one case (Raskin & Terry, 1988), we averaged the year from the range of years given for data collection (1979 to 1985, which averaged to 1982). The final sample consisted of 85 independent samples including 16,475 college students (6,616 men and 9,859 women).

Data Analytic Strategy

We analyzed how NPI scores have changed over time, primarily by examining correlations between mean scores and year of data collection. As in previous cross-temporal meta-analyses, means were weighted by the sample size of each study to provide better estimates of the population mean. We performed our analyses using SPSS, and the βs reported are standardized to allow for easier interpretation.

To calculate the magnitude of change in NPI scores, we used the regression equations and the averaged standard deviation (*SD*) of the individual samples. To compute the mean scores for specific years (e.g.,

1. This excluded six samples that would have otherwise been included, all of which were between 80% and 90% female. Because our analysis focuses on both-sex samples, these nearly all-female samples did not seem comparable, and, due to the sex difference in NPI scores, were likely to increase error variance. These samples were also confounded with year, as all of them were collected after 2001. Nevertheless, we realize some readers may be curious how including these samples might have affected the results. Including these samples decreased the β only slightly: $\beta = .48$, $p < .001$, $k = 91$ when weighted by sample size. This regression equation produced a total change of 0.31 *SD*s. The β with these samples included increased slightly when controlled by the samples' percentage female (β for year = .51, $p < .001$; β for percentage female = $-.16$, $p = .09$).

1982 or 2006), we used the regression equation from the statistical output (used to draw the regression line). The regression equation follows the algebraic formula $y = Bx + C$, where B = the unstandardized regression coefficient, x = the year, C = the constant or intercept, and y = the predicted mean NPI score. This formula yielded the position of the regression line (the mean NPI score, on the Y axis) for particular years. We obtained the average standard deviation (*SD*) by averaging the within-sample *SD*s reported in the data sources; thus this reflects the average variance of the measure in a sample of individuals. It is important to note that this method avoids the ecological fallacy, also known as *alerting correlations* (Rosenthal, Rosnow, & Rubin, 2000). The ecological fallacy occurs when the magnitude of change is calculated using the variation in mean scores rather than the variation within a population of individuals. This exaggerates the magnitude of the effect, because mean scores do not differ as much as individual scores. The method used here, in contrast, uses the standard deviation of the individual studies to capture the variance of the scale among a population of individuals.

RESULTS

American college students score progressively higher on narcissism between the early 1980s and 2006 (see Figures 1 and 2). There is a significant and positive correlation between NPI scores and year of

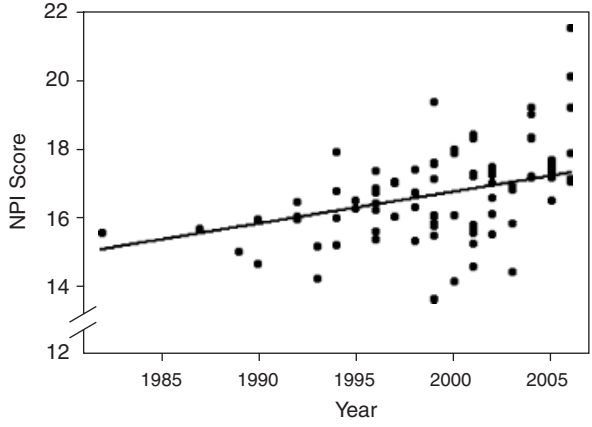

Figure 1
College students' Narcissistic Personality Inventory scores, 1982–2006.

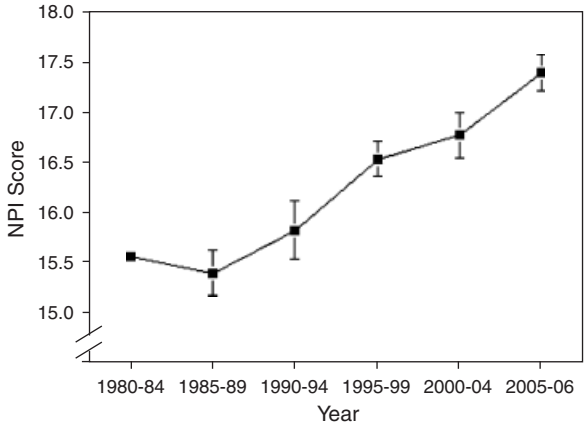

Figure 2
College students' Narcissistic Personality Inventory scores by time period. Capped vertical bars denote ± 1 *SE*.

data collection when weighted by sample size ($\beta = .53$, $p < .001$, $k = 85$).[2,3,4] Thus, more recent generations report more narcissistic traits. The regression equation (NPI mean = 0.09293 × year − 169.128) yields a score of 15.06 for 1982 and 17.29 for 2006. The

2. After the completion of our primary analyses, the second author (under the direction of the fifth author) collected unpublished dissertations and master's theses that used the NPI as part of her PhD dissertation at the University of Michigan. Eight dissertations met the inclusion rules and reported means. The effect is similar with these additional data points added, $\beta = .48$, $p < .001$, $k = 93$, $d = 0.29$, total $n = 18{,}924$.

3. We also analyzed the data after eliminating all samples from papers on which one or more of us was an author and unpublished data collected in one of our labs. The results for this subsample of the data were virtually identical to the main analysis, $\beta = .52$, $p < .001$, $k = 47$, $d = 0.29$.

4. We also weighted by the inverse of the variance (called w), a technique that includes the within-study standard deviation as well as sample size; w is the usual weight applied in meta-analyses. Shadish and Haddock (1994, pp. 272–273) provide weights for aggregated data, and we modified this technique for means to compute the variance: the within-study standard deviation squared, times $1/n$ of the individual study. We then inverted the variance ($1/v$) to make the weighting variable (w) (see also Lipsey & Wilson, 2001). Thus, weighting by w takes the standard deviation of the individual studies into account as well as the sample size. The results were very similar to weighting by sample size $\beta = .50$, $p < .001$, $k = 76$, $d = 0.29$. (This analysis includes fewer samples because not all sources reported sample standard deviations.)

average *SD* reported for the individual samples (from the articles we collected) is 6.86. Thus NPI scores increased 0.33 standard deviation from the early 1980s to 2006. This is a small-to-medium effect size (between .20 and .50) by Cohen's (1977) guidelines.

Converting the *SD* change to percentile scores is also informative. If the average student in the early 1980s scored at the 50th percentile of the distribution, the average student in 2006 scored at the 65th percentile (assuming a normal curve). In other words, almost two-thirds of recent college students are above the mean 1979–1985 narcissism score, a 30% increase (65 out of 100 in 2006, compared to 50 out of 100 in 1979–1985).

If we assume that the NPI still has a normal distribution, this shift in the mean score means that there are now more college students at the top end of the original distribution. For example, 24% of 2006 college students score 1 *SD* above the 1979–1985 narcissism mean, compared to 15% during that original data collection. (One *SD* above the 1979–1985 is a score of 22, representing someone who answers the clear majority of items—22 out of 40—in a narcissistic direction.) It is also interesting to note how recent means compare to data collected on a sample of celebrities such as movie stars, reality TV winners, and famous musicians (Young & Pinsky, 2006). This celebrity sample had a mean NPI score of 17.84, not much higher than the 2006 regression equation mean of 17.29. Thus, recent college students approach celebrities in their levels of narcissism.

As there were very few samples collected before 1990 (see Table 1), we also ran the regression analysis for samples collected 1990–2006. This produced very similar results: $\beta = .49$, $p < .001$, $k = 82$. This regression equation produced a mean of 15.88 for 1990 and 17.78 for 2006 (almost identical to the mean of 17.84 for celebrities; the averaged mean for all of the 2006 samples was 17.62). The magnitude of change was .28 *SD*s, so 2006 students scored at the 63rd percentile on a 1990 distribution. Narcissism also increased linearly between 2000 and 2006, $\beta = .37$, $p < .02$, $k = 41$, $d = 0.18$; this d for 6 years is more than half of the d of 0.33 for the entire 24-year period. The correlation is also significant when the analysis is restricted to the years 1982 to 1999, ($\beta = .45$, $p < .001$, $k = 44$, $d = 0.21$).

The results were also very similar when the 2006 samples, all of which are from unpublished data, are excluded, $\beta = .50$, $p < .001$, $k = 79$, $d = 0.29$; this also helps address any concern that the corre-

Table 1
Data Points Included in the Analysis

Source	Year	Published	*n*	Mean	*SD*
Adler (2000)	1999	No	78	15.47	4.85
Ames, Rose, and Anderson (2006) Study 1	1996	Yes	776	15.60	6.80
Ames, Rose, and Anderson (2006) Study 3	1997	Yes	176	16.00	6.80
Barry, Chaplin, and Grafeman (2006)	2001	Yes	120	18.28	7.46
Bartels (2005)	2004	No	73	19.20	6.80
Bradlee and Emmons (1992)	1989	Yes	147	14.99	6.03
Campbell, Finkel, Buffardi, Kumashiro, and Rusbult (2007) Study 1	2005	No	69	17.16	6.87
Campbell, Bosson, Goheen, Lakey, and Kernis (2007) Study 1	2005	Yes	154	17.39	6.29
Campbell and Foster (2002) Study 1	1997	Yes	119	16.98	
Campbell and Foster (2002) Study 2A	1997	Yes	304	17.03	
Campbell and Foster (2002) Study 2B	2000	Yes	108	17.99	
Campbell (1999) Study 2	1996	Yes	109	17.36	6.88
Campbell (1999) Study 3	1996	Yes	156	16.39	6.47
Campbell (1999) Study 4	1996	Yes	51	16.72	6.42
Campbell (1999) Study 5	1996	Yes	68	16.85	6.80
Campbell, Bush, Brunell, and Shelton (2005) Study 1	2002	Yes	232	16.10	7.00
Campbell, Bush, Brunell, and Shelton (2005) Study 2	2002	Yes	166	15.50	6.90
Campbell, Foster, and Finkel (2002) Study 1a	1996	Yes	80	16.49	7.83
Campbell, Foster, and Finkel (2002) Study 1b	1998	Yes	58	16.28	6.78
Campbell, Goodie, and Foster (2004) Study 1	2002	Yes	104	16.58	7.04

(Continued)

Table 1 (Contd.)

Source	Year	Published	*n*	Mean	*SD*
Campbell, Goodie, and Foster (2004) Study 2	2002	Yes	97	17.23	6.65
Campbell, Goodie, and Foster (2004) Study 3	2002	Yes	607	17.46	6.95
Campbell, Reeder, Sedikides, and Elliot (2000) Study 1	1995	Yes	160	16.27	7.15
Campbell, Reeder, Sedikides, and Elliot (2000) Study 2	1996	Yes	64	17.08	7.03
Campbell, Rudich, and Sedikides (2002) Study 1a	1998	Yes	113	15.30	6.67
Campbell, Rudich, and Sedikides (2002) Study 1b	1998	Yes	85	16.72	6.59
Campbell, Rudich, and Sedikides (2002) Study 2	1999	Yes	100	17.55	7.73
Campbell, Rudich, and Sedikides (2002) Study 3	1999	Yes	109	16.05	6.31
Cramer (1995)	1993	Yes	118	14.20	
Cramer (1998)	1996	Yes	88	15.33	
DeWall (2004)	2004	No	103	19.02	7.15
Dickinson and Pincus (2003)	2001	Yes	90	18.42	8.19
Exline and Geyer (2004)	2001	Yes	126	15.22	7.44
Exline, Baumeister, Bushman, Campbell, and Finkel (2004) Study 1	2001	Yes	270	17.20	6.60
Exline, Baumeister, Bushman, Campbell, and Finkel (2004) Study 3	2001	Yes	152	15.63	7.28
Exline, Baumeister, Bushman, Campbell, and Finkel (2004) Study 4	2003	Yes	241	14.56	6.49
Exline, Baumeister, Bushman, Campbell, and Finkel (2004) Study 5	1999	Yes	120	19.37	6.62
Exline, Baumeister, Bushman, Campbell, and Finkel (2004) Study 6	2003	Yes	69	16.90	5.74

(Continued)

Table 1 (Contd.)

Source	Year	Published	*n*	Mean	*SD*
Exline, Single, Lobel, and Geyer (2004) Study 2	2001	Yes	94	15.79	7.65
Eyring and Sobelman (1996)	1994	Yes	79	16.75	5.82
Farwell and Wohlwend-Lloyd (1998) Study 1	1996	Yes	152	16.80	
Farwell and Wohlwend-Lloyd (1998) Study 3	1996	Yes	67	16.21	
Foster (2006a)	2006	No	338	17.86	7.18
Foster (2006b)	2006	No	437	17.10	7.29
Foster, Shrira, and Campbell (2006) Study 1	2002	Yes	213	17.30	6.60
Foster, Shrira, and Campbell (2006) Study 2	2002	Yes	272	17.00	7.10
Gabriel, Critelli, and Ee (1994)	1992	Yes	146	16.44	6.39
Gaertner, Iuzzini, and O'Mara (2006)	2005	No	1182	17.25	6.79
Gurtman (1992)	1990	Yes	279	14.65	
Gustafson and Ritzer (1995) Study 1	1992	Yes	214	16.01	7.24
Gustafson and Ritzer (1995) Study 2	1992	Yes	367	15.93	7.15
Horton, Bleau, and Drwecki (2006) Study 1	2001	Yes	222	17.26	7.69
Jackson, Ervin, and Hodge (1992)	1990	Yes	301	15.93	6.99
Konrath and Bushman (2006)	2006	No	38	19.20	7.89
Konrath, Bushman, and Campbell (2006)	2004	Yes	260	18.32	6.81
Konrath, Bushman, and Campbell (2006)	2005	Yes	456	17.56	7.03
Krusemark (2005)	2005	No	95	17.66	7.47
Krusemark (2006)	2006	No	24	21.54	6.29
Ladd, Welsh, Vitulli, Labbe, and Law (1997)	1994	Yes	119	15.20	6.80
Le (2005)	2003	Yes	179	15.82	6.92
Liu (2005)	2005	No	199	16.50	6.66
Luhtanen and Crocker (2005)	1999	Yes	642	17.60	6.80
McHoskey (1995)	1993	Yes	423	15.13	6.60

(Continued)

Table 1 (Contd.)

Source	Year	Published	*n*	Mean	*SD*
McHoskey, Worzel, and Szyarto (1998)	1996	Yes	107	16.80	7.50
Mead (2006)	2006	No	63	20.11	7.23
Oleson, Poelhlmann, Yost, Lynch, and Arkin (2000)	1994	Yes	105	15.98	7.18
Raskin and Novacek (1989)	1987	Yes	230	15.65	6.84
Raskin and Terry (1988)	1982	Yes	1018	15.55	6.66
Rathvon and Holmstrom (1996)	1994	Yes	283	17.89	6.62
Rose (2006)	2006	No	236	17.04	6.84
Schreer (2002)	2001	Yes	89	15.53	5.81
Sedikides, Rudich, Gregg, Kumashiro, and Rusbult (2004) Study 1	1999	Yes	149	15.80	6.41
Sedikides, Rudich, Gregg, Kumashiro, and Rusbult (2004) Study 2	1999	Yes	81	16.06	6.17
Sedikides, Rudich, Gregg, Kumashiro, and Rusbult (2004) Study 4	1999	Yes	154	17.13	7.04
Stangor and Thompson (2002)	2000	Yes	182	17.87	
Sturman (2000)	1998	Yes	57	17.40	6.40
Sutin and Robins (2005)	2001	Yes	200	14.40	6.20
Twenge and Campbell (2003)	2000	Yes	208	16.04	6.91
Wallace and Baumeister (2002) Study 1	1999	Yes	49	16.02	7.73
Wallace and Baumeister (2002) Study 2	1999	Yes	71	13.61	6.73
Wallace and Baumeister (2002) Study 3	1999	Yes	54	15.74	8.33
Wallace and Baumeister (2002) Study 4	2000	Yes	74	14.11	6.61
Zhang and Baumeister (2006) Study 4	2004	Yes	40	18.30	9.40
Zuckerman and O'Laughlin (2006)	2003	Yes	191	16.80	7.10
Zuckerman and O'Laughlin (2006)	2004	Yes	176	17.21	6.90

lation or its magnitude is driven by the high outliers from that year (see Figure 1). The results were also similar when the data from all 13 samples from unpublished sources were excluded, $\beta = .45$, $p < .001$, $k = 72$, $d = 0.27$. Overall, the increase is linear rather than curvilinear; in a regression equation with year and year squared (the latter is the quadratic term; both variables were centered), for year, $\beta = .67$, $p < .001$, and for year squared, $\beta = .20$, *ns*.

We also analyzed single-sex means when they were reported. Because not all studies reported means broken down by gender and some unpublished single-sex means were obtained directly from authors, these analyses represent a subsample of the data that may not be representative. Thus, these analyses should be interpreted with caution. College men's NPI scores are not significantly correlated with year ($\beta = .16$, *ns*; $k = 44$, $d = 0.12$), but college women's scores are ($\beta = .46$, $p < .002$, $k = 44$, $d = 0.28$). The sex difference in NPI scores has also declined, $\beta = -.46$, $p < .001$; $k = 43$ (we conducted this analysis by computing the effect size *d* for sex differences and weighting the regression by *w*, the standard weight for *d*). In 1992 (the first year for which sex difference data were available), men scored 0.45 standard deviation higher than women on the NPI, but by 2006, men scored just 0.15 *SD* higher. Thus the sex difference in narcissism has declined from half a standard deviation (a medium effect size) to one-seventh of a *SD* (a small effect size).

DISCUSSION

A meta-analysis of 85 samples of American college students shows a systematic increase in scores on the Narcissistic Personality Inventory. The shift in scores means that the average college student now endorses about two more narcissism items than his or her predecessors did in the early 1980s. Although the effect size for the shift is statistically moderate rather than large (one-third of a standard deviation), it is larger than the effect of violent video games on aggression (Anderson & Bushman, 2001) and most racial differences in self-esteem (Twenge & Crocker, 2002). The generational shift over 25 years is also twice as large as the current sex difference in narcissism; thus generation is a better predictor of narcissism scores than gender.

These data are consistent with theories positing an increase in individualism in American society and with previous studies finding

generational increases in other individualistic traits such as self-esteem and agency (e.g., Twenge, 1997; Twenge & Campbell, 2001). The most recent college students score about the same on the NPI as a sample of celebrities (Young & Pinsky, 2006). The change is linear and steady, with the correlation significant when the analysis is limited to certain years only. It also appears that women are driving the increase in narcissism, consistent with the finding that the generational increase in agentic traits and assertiveness was stronger for women (Twenge, 1997, 2001b).

We were unable to analyze changes in specific subscales of the NPI, as very few researchers reported NPI means broken down by subscale. Thus, we do not know if only certain facets of narcissism are increasing among American college students, or if the change is evenly distributed across them. In addition, we do not know how the increase in narcissism is related to the previously documented rise in self-esteem (Twenge & Campbell, 2001). The rise in narcissism could be directly related to increases in self-esteem, or there could have been an increase in narcissistic traits independent of self-esteem.

Correlates of Narcissism

Is this rise in narcissism a bad thing? As measured by the NPI, narcissism is linked to a range of positive emotional outcomes, including self-esteem, positive affect, extraversion, and life satisfaction (e.g., Rose, 2002; Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004). Narcissism is associated with other benefits to the self as well, such as short-term (but not long-term) likeability (Oltmanns, Friedman, Fiedler, & Turkheimer, 2004; Paulhus, 1998), enhanced performance on public evaluation tasks (Wallace & Baumeister, 2002) including being selected for reality television (Young & Pinsky, 2006), short-term victories in competitive tasks (e.g., Campbell, Bush, Brunell, & Shelton, 2005), and emergent (though not successful) leadership (Blair, Hoffman, & Helland, in press; Brunell, Gentry, Campbell, & Kuhnert, 2006). Narcissism also has many costs to the self, such as distorted judgments of one's abilities (e.g., Paulhus, Harms, Bruce, & Lysy, 2004), risky decision making (Campbell, Goodie, & Foster, 2004), potential addictive disorders including alcohol abuse (Luhtanen & Crocker, 2005), compulsive shopping (Rose, 2007), and pathological gambling (Lakey, Goodie, & Camp-

bell, 2006). Many of the costs of narcissism are borne by other people. These include troubled romantic relationships (Campbell, Foster, & Finkel, 2002; Foster, Shrira, & Campbell, 2006), aggression (e.g., Bushman & Baumeister, 1998), assault (Bushman, Bonacci, Van Dijk, & Baumeister, 2003), white collar crime (Blickle, Schlegel, Fassbender, & Klein, 2006), and rapidly depleting common resources (Campbell et al., 2005). In sum, narcissism is associated with benefits to the individual that are primarily affective and most evident in the short term, but the costs of narcissism are paid by others and, eventually, by the individual as well (for a more detailed discussion of the trade-offs of narcissism, see Campbell & Buffardi, in press). Thus the implications of the rise in narcissism may be positive in the short term for individuals, but negative for other people, for society, and for the individual in the long term.

Many of the correlates of narcissism are also on the upswing, although we cannot be certain if they are directly tied to the rise in narcissism. Several positive personality traits correlated with narcissism have increased over the same time period, including self-esteem (Twenge & Campbell, 2001), agentic traits (Twenge, 1997), extraversion (Twenge, 2001a) and assertiveness (Twenge, 2001b). Behaviors and attitudes have also shifted in a direction consistent with a rise in narcissism. There is a trend among college students toward ''hooking up'' rather than having sex within committed relationships (Glenn & Marquardt, 2001; Manning, Longmore, & Giordano, 2005). Materialism has increased: 74% of college freshmen in 2004 cited ''being very well-off financially'' as an important life goal, compared to only 45% in 1967 (Astin, Oseguera, Sax, & Korn, 2004). In a 2006 survey, 81% of 18- to 25-year-olds said that getting rich was among their generation's most important goals; 64% named it as the most important goal of all. In addition, 51% said that becoming famous was among their generation's important goals. In contrast, only 30% chose helping others who need help, and only 10% named becoming more spiritual (Pew Research Center, 2007).

Reflecting the overconfidence typical of narcissism (e.g., Campbell et al., 2006; Morf & Rhodewalt, 2001), students today have markedly higher and more unrealistic expectations of educational attainment and success. More than half of recent high school students (51%) predicted that they would earn graduate or professional

degrees, even though only 9% of 25- to 34-year-old high school graduates actually hold these degrees. In 1976, only half as many (27%) predicted this outcome (Reynolds, Stewart, Sischo, & MacDonald, 2006). During the same period, the percentage of high school students who predicted that they would be working in a professional job by age 30 also increased, from 41% to 63% (in reality, only 18% of high school graduates ages 25 to 34 in both eras worked at professional jobs; Reynolds et al., 2006). Although these shifts likely have multiple causes and the role of narcissism is uncertain, these trends nevertheless move in the direction one would expect if young people were higher in narcissism.

Other recent trends are more difficult to reconcile with a rise in narcissism. Crime rates are down over this time period, specifically youth crime (U.S. Bureau of the Census, 2006), yet narcissism is correlated with criminal behavior. In addition, over the last 10 years significantly more high school students have reported they volunteered their time to help others sometime in the last year, although weekly and monthly volunteering rates show only small gains (Bachman, Johnston, & O'Malley, 2006). However, volunteer rates might be increasing because many high schools began requiring community service for graduation over this same time (Strauss & Howe, 2000, p. 216). Many colleges also favor volunteer work in admissions decisions, and college admissions have become more competitive. Thus the motive for increased youth volunteering is unclear, and this trend may not directly contradict the rise in narcissism. It is also possible that a more civic orientation could co-exist along with more narcissism; perhaps both have increased in more recent generations.

Future Research: The Uncertain Causes of Narcissism

The relationship between personality and culture is likely reciprocal, with societal changes driving increases in narcissism and vice versa. What societal trends may have led to the increased narcissism we found? We can speculate on several of these, although a great deal of future work needs to be done on the causes of narcissism. Schools and media activities may have promoted an increase in narcissism. Children in some preschools sing a song with the lyrics, "I am special/I am special/Look at me . . .", and many television shows for children emphasize positive self-feelings and specialness. Future research should examine whether school and media programs intended

to raise self-esteem also raise narcissism. Grade inflation may also play a role: In 1980, only 27% of college freshmen reported earning an A average in high school, but by 2004 almost half (48%) reported a high school A average (U.S. Bureau of the Census, 2006). However, the amount of studying has actually declined (33% of American college freshmen in 2003 reported studying 6 or more hours a week during their last year of high school, compared to 47% in 1987; Astin et al., 2004), as has performance on tests like the SAT. Future research should determine whether grade inflation builds narcissism.

Finally, future research should examine whether current technology is related to narcissistic traits. Devices such as iPods and Tivo allow people to listen to music and watch television in their own individual ways, and websites such as MySpace and YouTube (whose slogan is ''Broadcast yourself'') permit self-promotion far beyond that allowed by traditional media. These trends motivated *Time* magazine to declare that the 2006 Person of the Year was ''You,'' complete with a mirror on the cover. Most of the increase in narcissism occurred before the wide use of such technology, so these shifts—even if they do play a role—did not cause the initial upswing in narcissism scores. Instead, the rise in narcissism may have influenced the ways people use technology.

Limitations

The present study provides the most comprehensive examination to date of generational change in narcissistic personality traits. Even so, it is not without its limitations. Any analysis of self-report data is potentially limited by socially desirable responding. However, the NPI is not significantly correlated with social desirability (Watson et al., 1984). In addition, there have not been concomitant changes in socially desirable responding, which did not change during this time period (Twenge & Im, 2007). This makes it very unlikely that changes in socially desirable responding account for the present results.

This study also limits its conclusions to American society and generations, partially because there is not much data available over time from other countries. Americans score higher on narcissism than people from other world regions (Foster et al., 2003). Future analyses might determine if narcissism is also increasing in other cultures or if this cultural trend is limited to the United States.

The data are also limited to college student populations; future research might examine shifts in narcissism among other populations—for example, children or younger adolescents. However, the NPI is rarely given to noncollege samples; thus these data on college students are, as far as we know, the best available to study change in narcissism over the generations among nonclinical samples.

This study also cannot determine whether the change in narcissism is a purely generational effect or a time-period effect. As with any time-lag study including people of only one age group, we cannot know if those in other age groups also changed. It is possible that both younger and older Americans became more narcissistic from the 1980s to the 2000s. It is also possible that older Americans did not change at all or even became less narcissistic. Given the relative stability of social dominance after young adulthood (e.g., Roberts et al., 2006), as well as cross-sectional research showing lower narcissism scores in older adults (Foster et al., 2003), it seems likely that much of the shift is a generational rather than a time-period effect.

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