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Birth Cohort Increases in Narcissistic Personality Traits Among American College Students, 1982–2009

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Abstract

Previous research produced conflicting results on whether narcissistic personality traits have increased among American college students over the generations. Confounding by campus may explain the discrepancy. Study 1 updates a nationwide meta-analysis of college students' scores on the Narcissistic Personality Inventory (NPI) and controls for campus ($k = 107$; $N = 49{,}818$). In Study 2, the authors examine NPI scores among the students on one university campus, the University of South Alabama, between 1994 and 2009 ($N = 4{,}152$). Both studies demonstrate significant increases in narcissism over time (Study 1 $d = .37$, 1982–2008, when campus is controlled; Study 2 $d = .37$, 1994–2009). These results support a generational differences model of individual personality traits reflecting changes in culture.

Keywords

narcissism, personality, culture

Several theorists and authors have argued that American culture has become markedly more individualistic over the past few decades. Social norms have relaxed and individual freedom has become increasingly valued, resulting in cultural changes such as a rise in the number of single parents and greater opportunities for women and racial minorities (e.g., Fukuyama, 1999; Myers, 2000; Seligman, 1990). As models of cultural psychology would predict (e.g., the mutual constitution model; Kitayama & Markus, 1994), these larger culture-level changes also affect individuals, with Americans embracing more individualistic traits over the past few decades (e.g., Roberts & Helson, 1997; Twenge, 2001b).

There has been considerable debate over whether these increases in individualism have included the "dark side" of self-regard: narcissism, usually defined as an inflated sense of self. A meta-analysis of 85 samples of U.S. college students found a significant increase in scores on the Narcissistic Personality Inventory (NPI) between 1982 and 2006 (Twenge, Konrath, Foster, Campbell, & Bushman, 2008a). In contrast, Trzesniewski, Donnellan, and Robins (2008) concluded that no change in NPI scores occurred after they analyzed eight samples of students from three campuses of the University of California (UC) collected between 1982 and 2007. Previously, we speculated that the discrepancy between the two sets of results may have been caused by large shifts in the ethnic composition at the UC campuses over time (Twenge, Konrath, Foster, Campbell, & Bushman, 2008b), and showed that NPI scores increased significantly at UC Davis between 2002 and 2007 (the samples for which ethnicity data were available) when ethnic groups were analyzed separately—and even when the data were collapsed across ethnicity (Twenge & Foster, 2008). More recently, however, Donnellan, Trzesniewski, and Robins (2009) reanalyzed the UC Davis data and also included a sample of UC Berkeley students collected in 1996, for which they noted the ethnicity data had subsequently become available. Based on this reanalysis, they concluded that only a small increase in narcissism occurred between 1996 and the present and suggested that any increase in narcissism was "much ado about nothing."

Confounding by Campus

There is, however, an even more parsimonious explanation for the null results reported in Trzesniewski et al. (2008) and the small results reported in Donnellan et al. (2009): These analyses completely confounded campus and year. Among the eight samples in Trzesniewski et al., the 1982 sample was collected at UC Berkeley and UC Santa Cruz, the 1996 sample

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at UC Berkeley, and the 2002 to 2007 samples at UC Davis. Thus, it is impossible to tell whether any effects were because of campus or year and the effect of campus may have suppressed any increases with year if, for example, scores at UC Davis were systematically lower than those on other campuses—and they are (Twenge & Foster, 2008). Complete confounding by campus also occurred in Donnellan et al.'s update of this data controlling for ethnicity, as the 1996 sample was collected at UC Berkeley and the 2002 to 2008 samples at UC Davis.

Roberts, Edmonds, and Grijalva (in press) recently reanalyzed the data from our meta-analysis (Twenge et al., 2008a), finding, as we did, that narcissism increased over time in 85 samples. They then added the samples from Donnellan et al. (2009) and a previously unpublished data point from their own lab ($n = 234$) to the meta-analysis and reported there was no longer a significant change in narcissism. However, this analysis still heavily confounds campus with year, as the UC Davis samples from Donnellan et al. (2009) were all collected after 2002 and, at $N = 29{,}881$, constitute almost two thirds of the data set. When weighted by sample size, year is correlated .62 with campus ($1 = UC\ Davis$, $0 = not$); thus, campus and year are confounded. Roberts et al. claim that their analysis is consistent with the Twenge et al. (2008) meta-analysis as it gathers all of the data. However, it does not gather all of the available data and is not consistent with meta-analysis, as it selectively includes Donnellan et al.'s (2009) samples without systematically searching for other studies also published after 2006 (when our meta-analysis ended). Thus, it violates the most basic principle of meta-analysis, which is to conduct systematic searches for data. Nor do Roberts et al. (in press) follow another standard practice of meta-analysis, which is to account for important moderator variables (in this case, campus), especially when they might confound the results.

Given the possible implications for both individuals and society, it is especially important to determine whether there has been a birth cohort increase in narcissism independent of the influence of confounding variables. Narcissism is associated with a range of socially and personally detrimental beliefs and behaviors. Narcissists have relatively little interest in forming warm, emotionally intimate bonds with others (e.g., Campbell, 1999; Carroll, 1987), take more for themselves and leave less for others when faced with common resources (Campbell, Bush, Brunell, & Shelton, 2005), and aggressively lash out when rejected or insulted (Bushman & Baumeister, 1998; Twenge & Campbell, 2003). Although narcissism is also correlated with positive emotions such as extraversion and agency (Campbell, Rudich, & Sedikides, 2002; John & Robins, 1994), narcissists tend to be overconfident, not just confident (e.g., Paulhus & Harms, 2004). 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). Given the multitude of interpersonal problems caused by narcissism, it is especially important to determine whether it is increasing or not.

Overview and Models

We have two goals in this article. First, we update the meta-analysis on college students' NPI scores to include data points from studies appearing in the Web of Science database between 2006 and 2009. This systematically updates the meta-analysis through a database search rather than taking Roberts et al.'s (in press) approach of selectively adding data from only two of the studies published since 2006 (Donnellan et al., 2009; Trzesniewski et al., 2008). These analyses will also include controls for campus, as it appears to be an important moderator variable. Second, we analyzed data collected between 1994 and 2009 at the University of South Alabama. Examining data from within one campus eliminates the possibility of confounding by campus; this is important, as confounding by campus cannot be completely ruled out in the previous studies, including the updated nationwide meta-analysis. The South Alabama data cover a much longer range of years (1994–2009) than the within-campus study of UC Davis students (2002–2007) previously conducted (Twenge & Foster, 2008).

These analyses provide a test of two models of generational differences or similarities. The generational differences model maintains that significant differences in personality traits exist and that birth cohorts will differ in their level of certain traits (e.g., Twenge, 2006). This model draws from cultural psychology in arguing that as larger institutions and cultural practices change, these shifts will be reflected in individuals, and vice versa (the mutual constitution model; Kitayama & Markus, 1994), although the individual-level changes may be smaller than those seen at the level of cultural products (e.g., Morling & Lamoreaux, 2008). Changes in cultural practices such as those in parenting, education, and the media suggest that the rise in individualism (Fukuyama, 1999; Myers, 2000) has crossed over into cultural narcissism (Twenge & Campbell, 2009). In contrast, the generational similarities model posits that individuals' traits and attitudes have not changed over the generations (e.g., Trzesniewski et al., 2008). This model is silent on whether the larger culture has changed but maintains that any shifts in individual-level variables are either nonexistent or too small to be psychologically meaningful.

Study 1: Update of Meta-Analysis

The original meta-analysis of college students' scores on the NPI included studies appearing in the Web of Science database by August 2006. In this update, we searched for studies included in the database between 2006 and 2009 that were not included in the original meta-analysis. We also included a control for campus (i.e., whether data were collected from UC Davis or elsewhere) in the regression equation. In further analyses, we also included controls for five other campuses that contributed more than three samples each to the meta-analysis.

Method

We searched the Web of Science database in June 2009 for studies citing one of the original sources of the NPI (Raskin & Hall, 1979, 1981; Raskin & Terry, 1988) that fit the inclusion criteria used in the previous meta-analysis (Twenge et al., 2008a). The Web of Science database is very comprehensive, including journals from all fields of social science and the hard sciences. This search yielded 22 new mixed-sex samples of American college students who completed the 40-item forced-choice version of the NPI, 7 from UC Davis (all from Donnellan et al., 2009, which includes the Trzesniewski et al., 2008 samples; $N = 29{,}502$) and 15 from other recently published studies using students from other campuses ($N = 3{,}841$).[1] The sources for these data points are indicated with an asterisk in the references. Unless another date was mentioned in the article, year of data collection was coded as 2 years prior to publication.

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 report both standardized βs (the correlation between scores and year weighted by *n*) and effect sizes (*d*) calculated using the unstandardized *B*s and the standard deviation (variance) among individuals. Because the standardized βs rely on the variance among means, we use the number of studies (rather than the number of individuals) as the *df* for computing significance. These βs are ecological or alerting correlations (Rosenthal, Rosnow, & Rubin, 2000), which are most relevant for understanding changes at the group level rather than the individual level. They are by nature larger as there is less variance among means than among individuals. Thus, to compute an effect size (*d*)—the magnitude of the change relevant to a population of individuals—we multiplied the unstandardized *B*s by the number of years and divided by the average standard deviation of the individual samples obtained from the data sources (reflecting the average variance of the measure in a sample of *individuals*). This yields an effect size (*d*) that reflects the amount of variance explained by cohort among individuals and avoids the issue of ecological correlations. In summary, the standardized βs reported here reflect variance among groups, but the effect sizes (*d*s) reflect variance for individuals. Thus, Trzesniewski et al. (2008, p. 185) are incorrect that ecological correlations may account for the discrepancy between their results and those of the meta-analysis (Twenge et al., 2008a), as both analyses rely on the individual-level standard deviations to calculate effect sizes.

Results

As Roberts et al. (in press) also found, analyzing all of the data without a control for campus produces a null result (β = –.01). However, including a simple control for campus (1 = *UC Davis*, 0 = *not*) in the regression equation yields a significant effect for year of data collection (β = .47, $p < .001$, $k = 107$, $d = .37$, $N = 49{,}818$) from 1982 to 2008, replicating the increase found in the Twenge et al. (2008a) meta-analysis ($d = .33$, $k = 85$ from 1982 to 2006).[2] Campus is also a highly significant predictor in this analysis (β = –.93, $p < .001$).

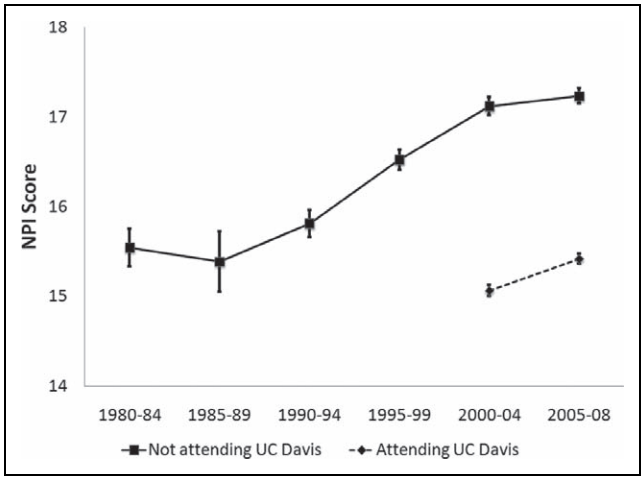

Figure 1. Mean Narcissistic Personality Inventory (NPI) scores across five time periods for students either attending University of California (UC) Davis or not
Note: Capped vertical bars denote ± 1 *SE*.

Scores also increased significantly when examined within the UC Davis and non–UC Davis samples (see Figure 1). For non–UC Davis samples, β = .53, $p < .001$, $k = 98$, $d = .35$, $N = 19{,}937$ from 1982 to 2007 (d per year = .0140). For the UC Davis samples, β = .83, $p < .005$, $k = 9$, $d = .12$, $N = 29{,}881$ from 2001 to 2008 (d per year = .0171). Thus, consistent with the generational differences model, college students' NPI scores have increased significantly over time. For samples collected outside UC Davis, about 30% of college students now score above 21 on the NPI, answering the majority of the questions in the narcissistic direction. In comparison, 19% of students scored this high in the early 1980s.

We also confirmed that samples from UC Davis had means significantly below those from other campuses. For samples collected between 2001 and 2008, the mean nationwide NPI score ($k = 49$) was 17.23 ($SD = 6.99$), compared to 15.27 at UC Davis ($SD = 6.95$, $k = 9$, $d = .28$). This is important, as the change over time was $d = .35$ for the non-Davis samples; thus, the campus difference could easily eliminate the change over time.[3]

We then added controls for five additional campuses that contributed three or more samples to the analysis; these were UC Berkeley, Case Western Reserve University, University of Michigan, University of North Carolina, and University of Georgia. With controls for all six campuses included, year was still a significant predictor of NPI scores (β = .44, $p < .001$, $d = .35$). Only two campus effects were significant in this analysis: UC Davis (β = –.99, $p < .001$) and Case Western (β = –.25, $p < .001$). Thus, the increase over time in college students' NPI scores was robust when campus effects were controlled.

Study 2: Within-Campus Analysis, 1994–2009

The results of Study 1 showed a significant increase in college students' NPI scores over the generations when campus (UC Davis vs. not) was controlled and also when controls for six

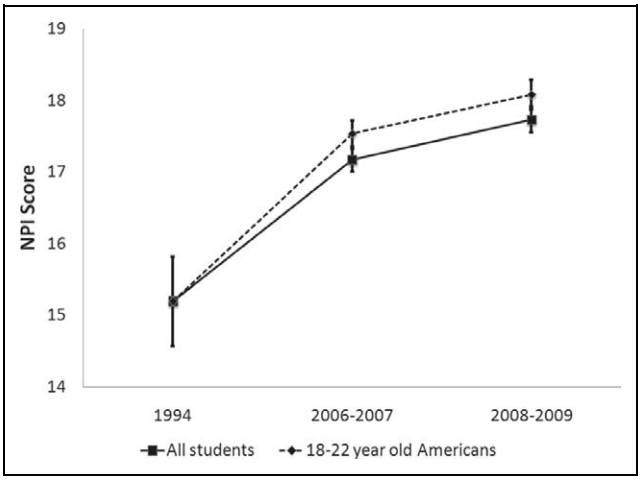

Figure 2. Mean Narcissistic Personality Inventory (NPI) scores across three time periods for students attending the University of South Alabama
Note: Capped vertical bars denote ± 1 *SE*.

different campuses were added. However, it is still possible that confounds for campus exist in this data set, if the distribution of data points somehow included more higher scoring campuses later in time. This seems unlikely, as researchers who use the NPI collect data at many different campuses and have presumably not systematically migrated to higher scoring campuses over time. However, because the meta-analysis includes data from 38 campuses around the country, confounding by campus cannot be completely ruled out.

One way to eliminate confounding by campus is to examine NPI scores within one campus. We did this for a sample of UC Davis students from 2002 to 2007, finding increases over these years (Twenge & Foster, 2008). However, this study covered only 5 years, a very brief time period, and the UC Davis samples are not very representative of U.S. college students as a whole. For example, students at public 4-year universities in 2006 across the United States were 67% White, 13% Black, 11% Hispanic, and 6% Asian American; in contrast, 2008–2009 undergraduates at UC Davis were 38% White, 3% Black, 14% Hispanic, and 44% Asian American. Thus, Asian Americans are 633% overrepresented at UC Davis compared to national averages, and Whites are 43% underrepresented. Even when examined within individual ethnicities, it is unclear whether the results at UC Davis would apply to students from another campus, given the unusually low NPI scores of Davis students.

Here, we examine NPI scores of students from the University of South Alabama (located in Mobile), which are available from one study in 1994 and in prescreening and large study data for each semester between spring 2006 and spring 2009. We chose to examine data from this campus because it was one of the few that had data available from both a 1990s sample and large samples collected recently. Analyzing scores from this campus has several advantages. First, its ethnic composition is much more similar to college students nationwide than that at UC Davis. In spring 2009, undergraduates at South Alabama were 73% White, 19% Black, 3% Hispanic, and 4% Asian American. Second, South Alabama is not the flagship institution of the state and thus draws from a population fairly diverse in socioeconomic status and family background. Third, samples from South Alabama provide a within-campus look at changes in NPI scores from an urban campus in the southeastern United States, a region and culture very different from that in rural Davis, California. As with any set of samples from one campus, however, we cannot be sure that the results would generalize more broadly.

Method

A sample of University of South Alabama students who completed the NPI in 1994 was included in the original meta-analysis (Twenge et al., 2008a). One hundred nineteen undergraduates at South Alabama completed the NPI as part of a study on narcissism and causal attributions (Ladd, Welsh, Vitulli, Labbe, & Law, 1997). Then, for each semester between spring 2006 and spring 2009, South Alabama undergraduates from the introductory psychology participant pool completed the NPI. This data collection resulted in $N = 4{,}152$.

Results

Students at the University of South Alabama scored progressively higher on narcissism between 1994 and 2009 (see Figure 2), consistent with the generational differences model. NPI scores were positively correlated with year when weighted by sample size ($\beta = .73$, $p < .05$, $k = 8$, $d = .37$ over 15 years). This is a yearly rate of change of $d = .0247$, a larger rate of change than that in the meta-analysis ($d = .0140$ per year), plausibly because of either the elimination of error variance by campus or a faster rate of change after 1994. A t test comparing the 1994 South Alabama sample to the 2006 to 2009 samples was also significant, $t(4151) = 3.19$, $p < .01$, as was a t test comparing the 1994 sample to the 2008–2009 samples, $t(1894) = 3.61$, $p < .001$. With an average NPI score of 15.20, approximately 18% of South Alabama students in 1994—fewer than one out of five—scored 21 or above on the NPI and thus answered the majority of the questions in the narcissistic direction. By 2008–2009, 34% of South Alabama students—one out of three—answered the majority of questions in the narcissistic direction.

The increase in narcissism was larger when we limited the 2006 to 2009 sample to American citizens between the ages of 18 and 22, the population most relevant for our model of culture affecting birth cohorts. For this population, $\beta = .86$, $p < .001$, $k = 8$, $d = .40$.

The 1994 South Alabama sample reported NPI means broken down by gender, so we were able to examine changes within gender over the entire time period. Similar to the results of the nationwide meta-analysis (Twenge et al., 2008a), the increase over the generations was stronger for college women ($\beta = .70$, $p = .05$, $d = .42$), for 1994 versus 2008–2009,

$t(1161) = 3.13$, $p < .01$, than for college men ($\beta = .63$, $p = .09$, $d = .35$), $t(732) = 2.22$, $p < .05$.

The increase in recent years is also significant. South Alabama students who completed the NPI in 2008 or 2009 scored significantly higher than those from 2006 or 2007, $t(4,031) = 2.37$, $p < .02$, $d = .08$, a yearly change of $d = .0266$. The simple correlation between NPI scores and year of data collection—using the individual data as Trzesniewski et al. (2008) recommend—was also significant, $r(4,032) = .04$, $p < .02$, $d = .08$. Note that this reflects change over only 3 years, 2006 to 2009; the yearly change is the more important comparison.

For the recent South Alabama data, we were also able to examine which items on the NPI were driving the change (the 1994 sample did not report means by subscale). Of the 7 NPI subscales identified by Raskin and Terry (1988), significant change between 2006–2007 and 2008–2009 appeared on three: Vanity, $t(4031) = 3.93$, $p < .001$, $d = .13$, Self-Sufficiency, $t(4031) = 2.63$, $p < .01$, $d = .09$, and Superiority, $t(4031) = 2.60$, $p < .01$, $d = .08$. The other four subscales also increased but did not reach statistical significance. These findings are consistent with the rise in self-sufficiency also found in Trzesniewski et al. (2008) but inconsistent with their finding of a decrease in superiority and vanity. As with the overall NPI results, the complete confounding by campus in their data may be the reason for the discrepancy.

When examined at the item level, all three vanity items showed significant change at $p < .05$ from 2006–2007 to 2008–2009 (''I like to show off my body,'' ''I like to look at my body,'' and ''I like to look at myself in the mirror.'') Other items with significant increases in endorsement included ''I am an extraordinary person,'' ''I am going to be a great person,'' ''I can live my life any way I want to,'' ''I expect a great deal from other people,'' ''I have a natural talent for influencing people,'' ''I like to be complimented,'' and ''I know I am a good person because everyone keeps telling me so.''

General Discussion

A nationwide meta-analysis ($N = 49,818$) and an examination of data within one campus ($N = 4,152$) both demonstrated significant increases in American college students' narcissistic traits over the generations. These analyses effectively resolve the discrepancies among the previous research on generational change in narcissism (Donnellan et al., 2009; Roberts et al., in press; Trzesniewski et al., 2008; Twenge et al., 2008a; Twenge & Foster, 2008), demonstrating that once significant campus effects are controlled, NPI scores increase (a) in a nationwide meta-analysis updated to 2009 and (b) within campus in large samples from a southern university. This is in addition to (c) the previous analysis showing increases in NPI scores at UC Davis (Twenge & Foster, 2008). These three analyses show remarkably similar yearly increases in college students' narcissistic traits, with students in more recent years scoring higher than their predecessors.

The results clearly support the generational differences model. The larger cultural changes in parenting, education, family life, and the media toward greater individualism have apparently affected the personality traits of individuals. In the nationwide meta-analysis, the increases are a little more than one third of a standard deviation over one generation (24 to 26 years), which Cohen (1977) characterized as small to moderate (however, even Cohen noted that his cutoffs were somewhat arbitrary). The South Alabama data cover only 15 years; if the same rate of change extended to 25 years, it would produce a d of .62, a moderate to strong effect. The changes are also considerable at the high end of the distribution, with 89% more South Alabama students answering the majority of questions in the narcissistic direction in 2008–2009 compared to 1994.

These results are also consistent with a large epidemiological study on narcissistic personality disorder (NPD), the more severe, clinical form of the trait. This study interviewed a nationally representative sample of 34,653 Americans in 2004–2005 to determine the lifetime prevalence of NPD (Stinson et al., 2008). Participants noted if they had suffered any of the symptoms of NPD at any point in their life and the researchers determined if these fit the criteria for NPD. The results showed that only 3.2% of people older than age 65 had experienced NPD during their lifetimes, compared to 5.6% of people age 45 to 64, 7.1% of those age 30 to 44, and 9.4% of those age 20 to 29. If there were no birth cohort effect in NPD, the older respondents, who lived many more years, would have more lifetime experience with NPD. However, the oldest respondents showed a lifetime rate of NPD only one third of that of the cohort in their 20s in 2004–2005. Although it is possible that older respondents forgot some NPD symptoms from when they were younger, the complete reversal of lifetime prevalence effects from what would be expected strongly suggests a cohort effect. Epidemiologists have used the same lifetime prevalence method to conclude that there are cohort increases in depression (for a review, see Klerman & Weissman, 1989). The linear progression of lifetime NPD over age or generation groups is also consistent with the linear increase in NPI scores over the generations found here.

It is possible that college students are now more willing to admit to narcissistic traits. If true, this is cultural change in and of itself. However, other evidence suggests that the rise in narcissism is not simply a self-report bias. First, the NPI uses a forced-choice format designed to minimize reporting bias, and the scale is not correlated with measures of socially desirable responding (Watson, Grisham, Trotter, & Biderman, 1984). Second, narcissistic behaviors and cultural indicators less subject to response bias have also increased: For example, parents now give their children more unique names (Twenge, Abebe, & Campbell, in press), more popular songs include individualistic and narcissistic lyrics (DeWall, Pond, Campbell, & Twenge, 2009), high school students have more unrealistically high expectations for success (Reynolds, Stewart, MacDonald, & Sischo, 2006), and rates of plastic surgery have increased (for a summary, see Twenge & Campbell, 2009). In addition, the NPD study previously mentioned (Stinson et al., 2008) used a structured clinical interview rather than a self-report

questionnaire and found the same generational trend as the NPI data.

Traits related to narcissism have also increased (e.g., extraversion, self-esteem; Scollon & Diener, 2006; Twenge, 2001a; Twenge & Campbell, 2001). However, the rise in self-esteem is unlikely to account for the entire increase, as the two traits correlate only about .25 (Brown & Ziegler-Hill, 2004). It is possible, however, that some of the same cultural influences that have increased self-esteem have also increased narcissism (e.g., school programs with themes such as "I am special").

We should acknowledge one major limitation of the data presented here. Both studies examined samples of college students at 4-year colleges or universities, a population that may not be representative of all young people. Thus, the results should not be overgeneralized, as they may not apply to young people who do not attend college. Future research should examine whether generational increases in narcissistic traits have also occurred across other populations.

In conclusion, a meta-analysis and two within-campus analyses all demonstrate increases in narcissistic traits among college students over the generations. Once the effect of confounding by campus is eliminated, the college student data from all sources show an increase in NPI scores, thus resolving the discrepancy between the results of Trzesniewski et al. (2008) and Twenge et al. (2008a). With the debate on changes in narcissism seemingly settled, attention should now be focused on the consequences of the increase and what may have caused it.

Notes

1. Trzesniewski, Donnellan, and Robins's (2008) 1982 sample was Raskin and Terry's (1988) original sample and was thus already included in the meta-analysis. Trzesniewski et al.'s 1996 sample, collected at the University of California (UC) Berkeley, is very similar in mean and n to a sample we included in our meta-analysis, also collected in 1996 at Berkeley. Thus, as it is likely a duplicate sample, we did not enter it into the main analyses. However, the results are unchanged when it is included in the analysis controlling for UC Davis (β for year $= .49$, $p < .001$, $k = 108$, $d = .38$). The results including controls for six campuses are also unchanged with this possible duplicate sample included (β for year $= .43$, $p < .001$, $k = 108$, $d = .33$). We did not include Roberts, Edmonds, and Grijalva's (in press) University of Illinois sample from 2009 ($n = 234$), as doing so would require a systematic search for recent unpublished data points, which neither we nor Roberts et al. conducted. However, the effect size is identical when this sample is included in the analysis controlling for UC Davis (β for year $= .45$, $p < .001$, $k = 108$, $d = .37$).
2. These results were identical when we controlled for the percentage of the sample that was female.
3. Given the large change in the results when campus (UC Davis vs. not) is controlled, it is fair to ask why this variable makes such a large difference. First, the UC Davis data points constitute almost two thirds of the total N and thus exert a large influence in the analysis. Second, these data points produce a suppressor effect on the overall result of higher Narcissistic Personality Inventory (NPI) scores in later years because their scores are lower and the data are all from more recent years (2002–2008). It is not clear why students at UC Davis score so much lower than those from other campuses. These samples are heavily Asian American (around 44%), and Asian Americans score lower than other ethnic groups; however, even White students at UC Davis score lower on the NPI than White students at other campuses (Donnellan et al., 2009; Twenge & Foster, 2008). It is likely that many UC Davis students, especially the non-Asians, come from the rural parts of California; perhaps the regional culture of those areas is less likely to encourage narcissism than urban or suburban areas. Other campuses, such as religiously affiliated schools, may also produce lower scores because of cultural influences.

Declaration of Conflict of Interest

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References

References marked with an asterisk indicate sources for data points for the analyses.

*Anderson, C., Ames, D. R., & Gosling, S. D. (2008). Punishing hubris: The perils of overestimating one's status in a group. *Personality and Social Psychology Bulletin*, *34*, 90-101.

Brown, R. P., & Ziegler-Hill, V. (2004). Narcissism and the non-equivalence of self-esteem measures: A matter of dominance? *Journal of Research in Personality*, *38*, 585-592.

*Buffardi, L. E., & Campbell, W. K. (2008). Narcissism and social networking Web sites. *Personality and Social Psychology Bulletin*, *34*, 1303-1314.

Bushman, B. J., & Baumeister, R. F. (1998). Threatened egotism, narcissism, self-esteem, and direct and displaced aggression: Does self-love or self-hate lead to violence? *Journal of Personality and Social Psychology*, *75*, 219-229.

*Bushman, B. J., Baumeister, R. F., Thomaes, S., Ryu, E., Begeer, S., & West, S. G. (2009). Looking again, and harder, for a link between low self-esteem and aggression. *Journal of Personality*, *77*, 427-446.

Campbell, W. K. (1999). Narcissism and romantic attraction. *Journal of Personality and Social Psychology*, *77*, 1254-1270.

Campbell, W. K., Brunell, A. B., & Finkel, E. J. (2006). Narcissism, interpersonal self regulation, and romantic relationships: An agency model approach. In E. J. Finkel & K. D. Vohs (Eds.), *Self and relationships: Connecting intrapersonal and interpersonal processes* (pp. 57-83). New York: Guilford.

Campbell, W. K., Bush, C. P., Brunell, A. B., & Shelton, J. (2005). Understanding the social costs of narcissism: The case of tragedy of the commons. *Personality and Social Psychology Bulletin*, *31*, 1358-1368.

Campbell, W. K., Rudich, E. A., & Sedikides, C. (2002). Narcissism, self-esteem, and the positivity of self-views: Two portraits of self-love. *Personality and Social Psychology Bulletin*, *28*, 358-368.

Carroll, L. (1987). A study of narcissism, affiliation, intimacy, and power motives among students in business administration. *Psychological Reports*, *61*, 355-358.

Cohen, J. (1977). *Statistical power analysis for the behavioral sciences*. (Rev. ed.) New York: Academic Press.

*Corry, N., Merritt, R. D., Mrug, S., & Pamp, B. (2008). The factor structure of the Narcissistic Personality Inventory. *Journal of Personality Assessment*, *90*, 593-600.

DeWall, C. N., Pond, R. S., Campbell, W. K., & Twenge, J. M. (2009). *Tuning in to psychological change: Linguistic markers of selfishness, loneliness, anger, anti-social behavior, and misery increase over time in popular U.S. song lyrics*. Unpublished manuscript.

*Donnellan, M. B., Trzesniewski, K. H., & Robins, R. W. (2009). An emerging epidemic of narcissism or much ado about nothing? *Journal of Research in Personality*, *43*, 498-501.

*Duffy, M. K., Shaw, J. D., Scott, K. L., & Tepper, B. J. (2006). The moderating roles of self-esteem and neuroticism in the relationship between group and individual undermining behavior. *Journal of Applied Psychology*, *91*, 1066-1077.

*Exline, J. J., Baumeister, R. F., Zell, A. L., Kraft, A. J., & Witvliet, C. V. O. (2008). Not so innocent: Does seeing one's own capability for wrongdoing predict forgiveness? *Journal of Personality and Social Psychology*, *94*, 495-515.

Fukuyama, F. (1999). *The great disruption: Human nature and the reconstitution of social order*. New York: Free Press.

John, O. P., & Robins, R. W. (1994). Accuracy and bias in self-perception: Individual differences in self-enhancement and the role of narcissism. *Journal of Personality and Social Psychology*, *66*, 206-219.

*Jonason, P. K., Li, N. P., Webster, G. D., & Schmitt, D. P. (2009). The dark triad: Facilitating a short-term mating strategy in men. *European Journal of Personality*, *23*, 5-18.

Kitayama, S., & Markus, H. R. (1994). *Emotion and culture: Empirical studies of mutual influence*. Washington, DC: American Psychological Association.

Klerman, G. L., & Weissman, M. M. (1989). Increasing rates of depression. *Journal of the American Medical Association*, *261*, 2229-2235.

Ladd, E. R., Welsh, M. C., Vitulli, W. F., Labbe, E. E., & Law, J. G. (1997). Narcissism and causal attribution. *Psychological Reports*, *80*, 171-178.

*Lakey, C. E., Rose, P., Campbell, W. K., & Goodie, A. S. (2008). Probing the link between narcissism and gambling: The mediating role of judgment and decision-making biases. *Journal of Behavioral Decision Making*, *21*, 113-137.

*Leary, M. R., Tate, E. B., Adams, C. E., Batts, A. A., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology*, *92*, 887-904.

*Miller, J. D., & Campbell, W. K. (2008). Comparing clinical and social-personality conceptualizations of narcissism. *Journal of Personality*, *76*, 449-476.

*Miller, J. D., Campbell, W. K., Young, D. L., Lakey, C. E., Reidy, D. E., Zeichner, A., et al. (2009). Examining the relations among narcissism, impulsivity, and self-defeating behaviors. *Journal of Personality*, *77*, 761-794.

*Moeller, S. J., Crocker, J., & Bushman, B. J. (2009). Creating hostility and conflict: Effects of entitlement and self-image goals. *Journal of Experimental Social Psychology*, *45*, 448-452.

Morf, C. C., & Rhodewalt, F. (2001). Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model. *Psychological Inquiry*, *12*, 177-196.

Morling, B., & Lamoreaux, M. (2008). Measuring culture outside the head: A meta-analysis of individualism-collectivism in cultural products. *Personality and Social Psychology Review*, *12*, 199-221.

Myers, D. G. (2000). *The American paradox: Spiritual hunger in an age of plenty*. New Haven, CT: Yale University Press.

Paulhus, D. L., & Harms, P. D. (2004). Measuring cognitive ability with the overclaiming technique. *Intelligence*, *32*, 297-314.

Raskin, R. N., & Hall, C. S. (1979). A narcissistic personality inventory. *Psychological Reports*, *45*, 590.

Raskin, R. N., & Hall, C. S. (1981). The Narcissistic Personality Inventory: Alternate form reliability and further evidence of construct validity. *Journal of Personality Assessment*, *45*, 159-162.

Raskin, R. N., & Terry, H. (1988). A principle components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. *Journal of Personality and Social Psychology*, *54*, 890-902.

Reynolds, J., Stewart, M., MacDonald, R., & Sischo, L. (2006). Have adolescents become too ambitious? High school seniors' educational and occupational plans, 1976 to 2000. *Social Problems*, *53*, 186-206.

Roberts, B. W., Edmonds, G., & Grijalva, E. (in press). It is developmental me not generation me: Developmental changes are more important than generational changes in narcissism. *Perspectives in Psychological Science*.

Roberts, B. W., & Helson, R. (1997). Changes in culture, changes in personality: The influence of individualism in a longitudinal study of women. *Journal of Personality and Social Psychology*, *72*, 641-651.

Rosenthal, R., Rosnow, R. L., & Rubin, D. R. (2000). *Contrasts and effect sizes in research: A correlational approach*. New York: Cambridge University Press.

Scollon, C. N., & Diener, E. (2006). Love, work, and changes in extraversion and neuroticism over time. *Journal of Personality and Social Psychology*, *91*, 1152-1165.

Seligman, M. E. P. (1990). Why is there so much depression today? The waxing of the individual and the waning of the commons. In R. E. Ingram (Ed.), *Contemporary psychological approaches to depression: Theory, research, and treatment* (pp. 1-9). New York: Plenum.

*Sommer, K. L., Kirkland, K. L., Newman, S. R., Estrella, P., & Andreassi, J. L. (2009). Narcissism and cardiovascular reactivity to rejection imagery. *Journal of Applied Social Psychology*, *39*, 1083-1115.

Stinson, F. S., Dawson, D. A., Goldstein, R. B., Chou, S. P., Huang, B., Smith, S. M., et al. (2008). Prevalence, correlates, disability, and comorbidity of DSM-IV narcissistic personality disorder: Results from the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry*, *69*, 1033-1045.

Trzesniewski, K. H., Donnellan, M. B., & Robins, R. W. (2008). Do today's young people really think they are so extraordinary? An

examination of secular trends in narcissism and self-enhancement. *Psychological Science*, *19*, 181-188.

Twenge, J. M. (2001a). Birth cohort changes in extraversion: A cross-temporal meta-analysis, 1966-1993. *Personality and Individual Differences*, *30*, 735-748.

Twenge, J. M. (2001b). Changes in women's assertiveness in response to status and roles: A cross-temporal meta-analysis, 1931-1993. *Journal of Personality and Social Psychology*, *81*, 133-145.

Twenge, J. M. (2006). *Generation me: Why today's young Americans are more confident, assertive, entitled—and more miserable than ever before*. New York: Free Press.

Twenge, J. M., & Campbell, W. K. (2001). Age and birth cohort differences in self-esteem: A cross-temporal meta-analysis. *Personality and Social Psychology Review*, *5*, 321-344.

Twenge, J. M., & Campbell, W. K. (2003). "Isn't it fun to get the respect that we're going to deserve?" Narcissism, social rejection, and aggression. *Personality and Social Psychology Bulletin*, *29*, 261-272.

Twenge, J. M., & Campbell, W. K. (2009). *The narcissism epidemic: Living in the age of entitlement*. New York: Free Press.

Twenge, J. M., & Foster, J. D. (2008). Mapping the scale of the narcissism epidemic: Increases in narcissism 2002-2007 within ethnic groups. *Journal of Research in Personality*, *42*, 1619-1622.

Twenge, J. M., Abebe, E. M., & Campbell, W. K. (2010). Fitting in or standing out: Trends in American parents' choices for children's names, 1880-2007. *Social Psychological and Personality Science, 1,* 19-25.

Twenge, J. M., Konrath, S., Foster, J. D., Campbell, W. K., & Bushman, B. J. (2008a). Egos inflating over time: A cross-temporal meta-analysis of the Narcissistic Personality Inventory. *Journal of Personality*, *76*, 875-901.

Twenge, J. M., Konrath, S., Foster, J. D., Campbell, W. K., & Bushman, B. J. (2008b). Further evidence of an increase in narcissism among college students. *Journal of Personality*, *76*, 919-927.

*Vazire, S., Naumann, L. P., Rentfrow, P. J., & Gosling, S. D. (2008). Portrait of a narcissist: Manifestations of narcissism in physical appearance. *Journal of Research in Personality*, *42*, 1439-1447.

Watson, P. J., Grisham, S. O., Trotter, M. V., & Biderman, M. D. (1984). Narcissism and empathy: Validity evidence for the Narcissistic Personality Inventory. *Journal of Personality Assessment*, *48*, 301-305.

*Webster, G. D., Kirkpatrick, L. A., Nezlek, J. B., Smith, C. V., & Paddock, E. L. (2007). Different slopes for different folks: Self-esteem instability and gender as moderators of the relationship between self-esteem and attitudinal aggression. *Self and Identity*, *6*, 74-94.

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