

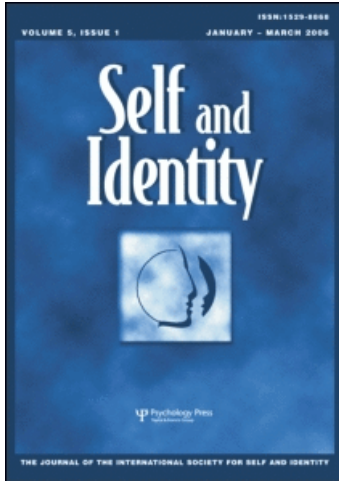
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## Generational increases in agentic self-evaluations among American college students, 1966–2009

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Compared to previous generations, more American college students now rate themselves as above average on attributes such as academic ability, drive to achieve, leadership ability, public speaking ability, self-confidence, and writing ability (based on a nationally representative sample collected 1966–2009;  $N = 6.5$  million). These birth cohort differences are similar with controls for race and gender and occurred despite the college population becoming less selective. Trends in positive self-views are correlated with grade inflation (which increased  $d = 0.81$ ), but are not explained by changes in objective performance (e.g., SAT scores have declined,  $d = -0.22$ ) or effort (time spent studying is down,  $d = -0.31$ ). Broad cultural shifts emphasizing positive self-views have apparently resulted in enhanced self-evaluations on agentic domains. Self-evaluations on communal attributes, such as understanding others, cooperativeness, and spirituality, either decreased or were unchanged.

**Keywords:** Above-average effect; Birth cohort; Generation; Self-evaluations.

College students in 1966 lived in a world incomprehensible to today's young people. The internet, cell phones, and digital music players did not exist. Born in 1948 or 1949, students arriving at college in 1966 grew up in a postwar era that valued conformity to social norms and modesty (Myers, 2000; Yankelovich, 1981). Soon after 1966, however, the climate shifted as college students began to protest the Vietnam War and the American social structure, questioning social rules and arguing that individual expression was paramount. This movement eventually resulted in a widespread cultural emphasis on self-esteem and individual freedoms (Baumeister, 1987; Myers, 2000).

Just as a regional culture shapes individuals' attitudes and actions, the culture of specific time periods leads to generational differences. Thus, cultural change within a society can be understood with the same models employed to understand differences across societies. The *mutual constitution model of culture and the psyche* (Kitayama & Markus, 1994; Markus & Kitayama, 1994) proposes that cultures are created and maintained by the interaction of systems including core cultural ideas, cultural institutions, specific social behaviors, and individual psychology (e.g., the self-concept). These elements are mutually constitutive because the ideas and institutions

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of the culture cannot exist without the individuals' specific behaviors and psychological beliefs, and individual behaviors and beliefs are shaped by the core cultural ideas and cultural institutions.

Broad cultural trends toward greater individualism and positive self-views (such as parents, teachers, and media encouraging higher self-esteem among young people) could result in younger generations embracing increasingly positive self-views ("Generation Me"; Twenge, 2006). Consistent with this view, generational increases appear in self-esteem, assertiveness, narcissism, high expectations, and agency in samples diverse in socioeconomic status and education level (e.g., Gentile, Twenge, & Campbell, 2010; Reynolds, Stewart, MacDonald, & Sisco, 2006; Stewart & Bernhardt, 2010; Twenge, 1997, 2001a; Twenge & Campbell, 2001, 2008; Twenge & Foster, 2010; but cf. Trzesniewski & Donnellan, 2010; Trzesniewski, Donnellan, & Robins, 2008; Twenge & Campbell, 2001, 2008, for smaller or null generational differences among high-school respondents on some items). Because these studies examine like-age samples across time, the differences must be due to generation or time period and cannot be caused by age or development. Considerable debate has surrounded the issue of whether generations differ in positive self-views, with Trzesniewski and colleagues (Trzesniewski & Donnellan, 2010; Trzesniewski et al., 2008) arguing that sampling concerns limited the conclusions of previous studies.

In addition, little research has explored generational differences in the self-concept, including domain-specific self-evaluations such as rating oneself above average compared to peers. Only two papers have addressed this issue, both in a very limited way, and found small ( $d=0.05$  and  $d=0.10$ ) increases in domain-specific self-evaluations in school ability and intelligence in a nationally representative sample of high-school students (Trzesniewski & Donnellan, 2010; Twenge & Campbell, 2008). Generational differences in other self-concept domains have not been examined. Previous studies of the above-average effect have found several moderators (e.g., Alicke, Klotz, Breitenbecher, Yurak, & Vrendenburg, 1995; Kruger, 1999; Kruger, Windschitl, Burrus, Fessel, & Chambers, 2008); thus, it seems important to examine generational differences on a broad range of domain-specific self-evaluations rather than just two. In addition, the boundary conditions of generational differences in self-evaluations are not known. Traits that have increased over the generations, such as narcissism and extraversion (Twenge, 2001b; Twenge & Foster, 2010), are related primarily to agentic self-views and unrelated to communal self-views (e.g., Campbell, Bosson, Goheen, Lakey, & Kernis, 2007; Campbell, Rudich, & Sedikides, 2002). This creates the possibility that only some domains, such as agentic ones, will show generational change. Thus, it would be useful to examine generational differences in a diverse array of domain-specific self-evaluations. Given previous debate over sampling concerns, such analyses would ideally be done on a nationally representative sample.

To this end, we turned to the American Freshman survey, a nationally representative sample of students entering 4-year colleges or universities conducted since 1966 (total  $N=9$  million). The survey asks students to rate their abilities compared to their peers on 18 positive attributes such as drive to achieve, emotional health, leadership ability, self-confidence, writing ability, and understanding others. Students rate themselves as lowest 10%, below average, average, above average, or highest 10% on each attribute.

These items are an especially useful measure of positive self-views. The above-average effect is a form of self-enhancement, in which some people see themselves as better than the average person (Alicke et al., 1995). These self-ratings of specific skills

and attributes, sometimes referred to as domain-specific self-evaluations or specific self-conceptions, are a classic measure of self-concept (Alicke, 1985; Pelham & Swann, 1989; Robins, Hendin, & Trzesniewski, 2001). Such self-evaluations correlate positively with established measures of global self-esteem (Beauregard & Dunning, 2001; Brown, Dutton, & Cook, 2001; Robins et al., 2001; Silvera & Seger, 2004). However, they are not identical to global self-esteem, which constitutes a global evaluation of the self rather than a combination of ratings of specific self-attributes.

We expected that domain-specific self-evaluations would increase over the generations. Importantly, however, we expected that this increase would primarily occur on agentic attributes, usually defined as those involving individual achievement and skill (e.g., drive to achieve, public speaking ability, self-confidence), but not be evident on communal variables (e.g., cooperativeness, understanding others, spirituality). We based these predictions on two related sources: past generational data and general value shifts in culture. First, the pattern of high agency but average or below-average communalism is consistent with narcissism (e.g., Campbell et al., 2002, 2007). It is also consistent with other generational differences, such as increasing extraversion (Twenge, 2001b) and decreasing empathy (Konrath, O'Brien, & Hsing, 2011). Second, increasingly positive self-views on agentic traits are consistent with a cultural shift emphasizing individualism and self-admiration in the United States over this time period (see, e.g., Fukuyama, 1999; Myers, 2000; Twenge, 2006; Twenge & Campbell, 2009). Baumeister (1987) argued that the cultural movement toward focusing on the self (vs. society) began during Renaissance times and accelerated after the 1960s and 1970s, when individualism crossed into self-admiration. In the 1970s, the communal activism of the 1960s began to disintegrate and the human potential movement shifted toward an emphasis on positive self-feelings (Twenge & Campbell, 2009). For example, the first popular book on self-esteem was Nathaniel Branden's *The Psychology of Self-esteem*, published in 1969. During the ensuing decades, it became popular to promote self-esteem, emphasize specialness and uniqueness, and encourage positive self-thoughts, partially due to the belief that self-esteem and "believing in yourself" was essential for success in life (Baumeister, Campbell, Krueger, & Vohs, 2003; Twenge, 2006). Eventually, these cultural messages encouraged people to not just think positively of themselves, but to consider themselves better than they actually were (e.g., "Everyone is special"). This self-enhancement message spread to the educational system during the 1970s and 1980s (Twenge & Campbell, 2001) and may be one of the reasons why high-school students now receive better grades than previous generations even though they are doing fewer hours of homework (Twenge & Campbell, 2008). These cultural messages of self-admiration have primarily focused on agentic areas of achievement such as self-confidence, academic ability, and leadership, with less attention paid to communal traits such as caring for others. If American culture has increasingly promoted self-admiration, recent students will be more likely to believe that they are above average in abilities, especially agentic abilities. In addition, these increasingly positive self-views should be predicted by measurable products of the increase in self-admiration such as grade inflation, but will not be related to increases in objectively measured performance (e.g., test scores).

The available sample consisted of college students, a selected rather than complete portion of young people. However, colleges have become *less* selective over this time period: 30% of American 18- to 19-year-olds entered a 4-year college or university in 1966, compared to 39% in 2008 (Snyder & Dillow, 2010). Thus, if college students actually are more skilled than their non-college peers on attributes such as academic ability and leadership and base their self-ratings accordingly, the decline in selectivity

would cause self-ratings to decrease over time. In other words, a less selected sample should mean fewer respondents who actually are above average. To further empirically examine the role of external standards, we explored whether any shifts in domain-specific self-evaluations were correlated with measures of objective performance such as test scores, or with increased effort. We hypothesized that any generational increase in self-evaluations would not be caused by greater skill or effort but instead would be rooted in the cultural shift toward self-admiration, manifested—for example—through grade inflation.

## Method

### *Participants*

The American Freshman project, part of the Cooperative Institutional Research Program (CIRP) at the Higher Education Research Institute (HERI) of UCLA, has surveyed a nationwide sample of first-year students at 4-year colleges or universities in the fall every year since 1966. Originally, some two-year colleges participated, but the data—including that for past years—are now reported only for students at 4-year colleges or universities ( $N=9$  million from 1,201 college campuses). Data for campuses are included only if more than 75% of first-time full-time freshman students participated. The survey weights its results to be demographically representative of all first-year students at 4-year colleges and universities in the United States. The weighting is done in a two-step procedure: first to correct for nonparticipation within campuses, and second to ensure that the campuses included are representative of 4-year colleges and universities in the United States (Pryor, Hurtado, Saenz, Santos, & Korn, 2007). Unlike a cross-sectional study done at one time, a time-lag study such as this one can isolate generational and time period effects from those due to age or development (Schaie, 1965).

### *Domain-specific Self-evaluations*

Among the questions on the American Freshman survey are: “Rate yourself on each of the following traits as compared with the average person your age. We want the most accurate estimate of how you see yourself.” We analyzed responses to all attributes included in the 2009 survey that had been asked for at least 5 years. The items *academic ability*, *artistic ability*, *drive to achieve*, *leadership ability*, *mathematical ability*, *public speaking ability*, *self-confidence (intellectual)*, *self-confidence (social)*, *understanding of others*, and *writing ability* were included in 1966, 1971, 1974, 1976, 1980, 1985, 1986–2003, and 2005–2009 ( $N = 6,451,524$ ). Other items were included beginning in the 1980s or 1990s: *computer skills* (1999), *cooperativeness* (1990), *creativity* (1993), *emotional health* (1985), *physical health* (1985), *self-understanding* (1996), and *spirituality* (1996).

The choices for each attribute were “highest 10%,” “above average,” “average,” “below average,” and “lowest 10%.” Note that the referent in this question is the “average person your age,” not the “average college student your age.” Because the referent is broader than the sample, we will not refer to these ratings as self-enhancement.

We obtained the aggregated data for all students, male students, and female students from four of HERI’s publicly available data volumes: *The American Freshman: Forty Year Trends* (Pryor et al., 2007), *The American Freshman: National*

*Norms for Fall 2007* (Pryor, Hurtado, Sharkness, & Korn, 2008), *The American Freshman: National Norms for Fall 2008* (Pryor et al., 2009), and *The American Freshman: National Norms for Fall 2009* (Pryor, Hurtado, DeAngelo, Blake, & Tran, 2010). These sources report the combined percentage of those who responded either “highest 10%” or “above average” for each year. These research reports are similar to the summary volumes of *Monitoring the Future* (e.g., Bachman, Johnston, & O’Malley, 2009). The Pryor et al. (2007) volume includes two paragraphs in the introduction to the volume noting that students now rate their academic ability more highly (pp. 13–14). This description mentions some of the mean yearly percentages of 6 of the 18 attributes but does not conduct statistical significance testing, perform regressions to test for linear or curvilinear trends, examine any moderators (e.g., gender), calculate effect sizes, discuss differences between agentic and other traits, or examine relationships with objective performance, subjective performance, or effort (see below). To our knowledge, data analyses on these variables have not previously been published.

### *Objective Performance, Subjective Evaluations by Others, and Effort*

In theory, changes in objectively measured performance should not affect the self-evaluations. Students are asked to compare themselves to the average person their age; thus, a change in average ability should be factored into that comparison as students will be comparing themselves to those in their cohort. If students were asked to report their traits compared to an objective standard, then the level of the objective standard would be relevant.

In reality, however, it is at least possible that students are instead using some objective standard when making ratings, and thus changes in objective performance might be relevant. In order to confront this possibility empirically, we sought such relevant objective measures. Many of the domains of evaluation measured here lack an available objective standard for comparison. For three domains, however, the SAT might be considered a useful objective standard for the performance of students entering 4-year colleges or universities: the verbal SAT for writing ability, the math SAT for mathematical ability, and total SAT scores for academic ability. Although not every student who takes the SAT will enroll in a 4-year college (though most will, as community colleges generally do not require the test), and not every student who enrolls in a 4-year college has taken the SAT (some take only the ACT), SAT scores are the best objective measure of performance available for this population. We obtained the average SAT scores for each year from the *Statistical Abstract of the United States* (US Bureau of the Census, 2010). The SAT was renormed in 1995, so scores before that time were adjusted to place scores from all years on the same scale.

Another possibility is that college students’ skills have increasingly diverged relative to the larger population of young people who are identified as the referent group (“the average person your age”). Given that a higher percentage of youth have entered 4-year colleges in recent years compared to the past, this seems unlikely. However, addressing this with data on skills still seemed relevant. The National Assessment of Educational Progress (NAEP) has reported math and reading scores for a nationally representative sample of US 17-year-old high-school students every few years since the early 1970s. We obtained these scores from the 2009 *Digest of Educational Statistics* (Snyder & Dillow, 2010). To capture any divergence in skill between the college students and the broader reference group, we calculated the

difference between the performance of the average student entering a 4-year college or university ( $z$ -scored SAT scores for each year) and the average 17-year-old's performance ( $z$ -scored NAEP scores) by subtracting the two  $z$ -scores. A high, positive difference means that college students' skills were relatively higher than the general population by historical averages; a negative difference means that college students' skills were closer to that of the general population.

More subjective evaluations, such as grades, address a different question: How are trends in domain-specific self-evaluations influenced by feedback from others? The American Freshman survey asks respondents to self-report "your average grade in high school" with 8 choices ranging from "D" to "A or A+." This question has been asked every year 1966–2009. We calculated the mean response on this item for each year using the percentage responses for each choice. We also calculated the difference between  $z$ -scored grades and  $z$ -scored SAT scores by year. A positive difference means that college students' grades were higher than their objective performance by historical averages; a negative difference means their grades were lower than their performance.

To discover if spending more hours studying had any relationship with grades or self-evaluations, we also examined responses to the item "During your last year in high school, how much time did you spend in a typical week doing the following activities? Studying/homework." The choices were "None," "Less than one hour," "1 to 2 hours," "3 to 5 hours," "6 to 10 hours," "11 to 15 hours," "16 to 20 hours," and "over 20 hours." This question has been asked since 1987. We calculated the mean response on this item for each year using the percentage responses for each choice.

### *Data Analysis Plan*

We used the statistical techniques of cross-temporal meta-analysis to analyze the data (see, e.g., Twenge, Konrath, Foster, Campbell, & Bushman, 2008; note that the present study is not a meta-analysis because the data are from one source, but is similar as it analyses means and is cross-temporal). This technique uses weighted linear regressions to obtain standardized  $\beta$ s representing the correlation between mean self-ratings and year weighted by sample size. Here, we used the data for all available years 1966–2009. Because the standardized  $\beta$ s rely on the variance among means, we use the number of years (rather than the number of individuals) as the  $df$  for computing significance. Such  $\beta$ s are sometimes labeled ecological or alerting correlations (Rosenthal, Rosnow, & Rubin, 2000) and are more relevant for understanding changes at the group level rather than the individual level. Ecological correlations are typically larger than the corresponding individual-level correlations over time, as there is normally less variance among sample means than among individuals (this lack of variance is why we can, for example, predict the mean grade of a class relatively closely). This does *not* mean that ecological correlations are artificially inflated, only that they are better suited for predicting group means than for predicting individual means (see Twenge & Campbell, 2010, for further discussion).

However, it is still useful to obtain an effect size relevant to the variance among individuals. This tells us how much the means have changed relative to the standard deviation associated with individual scores on the items. To compute the individual-level effect size, we multiplied the unstandardized  $\beta$ s from the regression equation by the number of years, which yields the difference due to year. We then divided by the individual-level  $SD$ s of the self-ratings<sup>1</sup> weighted by sample size for each year. This

yields an effect size ( $d$ ) that reflects the amount of variance explained by birth cohort among individuals and yields effect sizes identical to those produced by individual-level data (Twenge & Foster, 2008). In summary, the standardized  $\beta$ s reflect variance among groups, but the effect sizes ( $ds$ ) reflect variance among individuals. We also report  $t$ -tests comparing means from the first year of data collection (in most cases, 1966) and 2009 for each self-rating. These analyses also rely on individual-level  $SD$ s.

### *Controls for Demographic Shifts*

The demographics of college students shifted between 1966 and 2009. College populations are now more female; 46% of the American Freshman sample was women in 1966, compared to 55% in 2009. The aggregate data is available broken down by gender, so we were able to examine change over time within gender. The college student population also became more ethnically diverse over this time period, similar to the population of the United States as a whole. The largest increase was among Latino/a students, who were 0.3% of American Freshman respondents in 1971 and 11.2% in 2009, followed by Asian-American students, who increased from 0.6% in 1971 to 9.9% in 2009. The increase for Black students was smaller, from 7.5% in 1971 to 11% in 2009. If, as we hypothesize, self-evaluations have become more positive over the generations, these demographic shifts would suppress rather than exaggerate any increase, as Latino/as and especially Asian Americans report lower self-esteem and self-enhancement compared to Whites and Blacks (e.g., Heine, Lehman, Markus, & Kitayama, 1999; Twenge & Crocker, 2002).

Nevertheless, it would be useful to rule out race/ethnicity as a confound. The aggregate American Freshman means are not broken down by ethnic group, but the individual-level data for part of the time period, from 1971 to 1998, was available.<sup>2</sup> This allowed us to examine the correlation between year and self-evaluations controlled for race/ethnicity, and thus determine whether any change in self-evaluations was due to the ethnic composition of the samples rather than directly to year of data collection.

### *Ratings of Attributes by Coders*

We hypothesized that self-ratings on agentic attributes—those most linked to individualism and self-admiration—would increase. To determine how agentic and communal the attributes were, 11 undergraduate coders blind to hypotheses rated each attribute on a Likert-type scale from 1–7 on agency and, separately, on communion. We defined agency and communion to the coders based on established sources (Aronson, Wilson, & Akert, 2010, p. 275; Campbell et al., 2007): “*Agentic* refers to traits that imply status and intelligence, such as: assertive, controlling, dominant, independent and self-confident. *Communal* refers to traits that imply kindness and morality such as: concerned with the welfare of others, warm, helpful, kind, affectionate.”

## **Results**

Compared to those of previous generations, recent American college students are more likely to view themselves as above average on attributes such as academic ability, drive to achieve, leadership ability, self-confidence, and writing ability (see Table 1 and Figure 1). Seventy-three percent more college students in 2009 (vs. 1966)

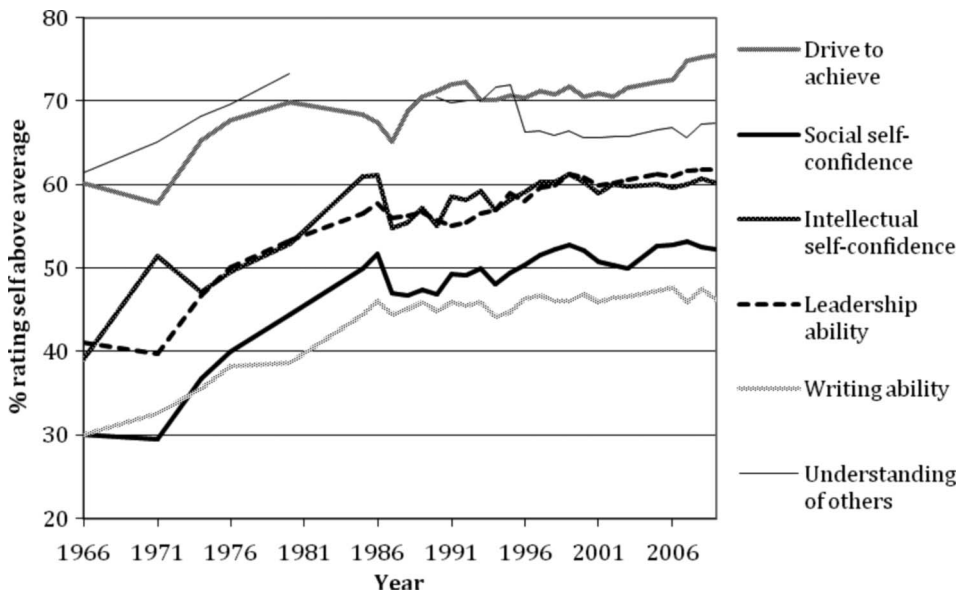


rated themselves as above average in social self-confidence, 53% more in writing ability, 54% more in intellectual self-confidence, 48% more in public speaking ability, and 51% more in leadership ability. Self-evaluations of understanding others and cooperativeness were unchanged, and self-evaluations of emotional health, physical health, and spirituality decreased.

**TABLE 1** Generational Changes in College Students' Domain-specific Self-evaluations, Grades, and Hours Spent Studying, 1966–2009

Survey item	Mean		<i>t</i>	$\beta$ (group)	<i>d</i> (indiv.)
	1966	2009			
<i>Self-ratings of ability</i>					
Academic ability	64%	70%	40.41*	0.86*	0.17
Artistic ability	19%	29%	73.61*	0.95*	0.25
Computer skills (1999)	32%	39%	50.32*	0.85*	0.14
Cooperativeness (1990)	73%	74%	6.98*	0.34	0.01
Creativity (1993)	52%	56%	26.28*	0.74*	0.10
Drive to achieve	60%	76%	108.92*	0.87*	0.25
Emotional health (1985)	64%	55%	-56.95*	-0.90*	-0.17
Leadership ability	41%	62%	135.66*	0.93*	0.39
Mathematical ability	39%	44%	31.97*	0.60*	0.09
Physical health (1985)	64%	56%	-50.47*	-0.88*	-0.16
Popularity	34%	39%	32.97*	0.17	0.06
Public speaking ability	25%	37%	84.41*	0.95*	0.31
Self-confidence (intellectual)	39%	60%	135.66*	0.82*	0.31
Self-confidence (social)	30%	52%	145.08*	0.87*	0.40
Self-understanding (1996)	58%	59%	5.80*	-0.24	-0.02
Spirituality (1996)	44%	38%	-41.07*	-0.81*	-0.18
Understanding of others	61%	67%	39.90*	-0.13	-0.03
Writing ability	30%	46%	105.51*	0.85*	0.28
<i>Subjective evaluation by others</i>					
Grades (% with A-average or above)	19%	48%	255.23*	0.95*	0.81
<i>Objective performance</i>					
SAT Verbal	543%	501%	296.98*	-0.69*	-0.42
SAT Math	516%	515%	7.07*	0.54	-0.01
SAT Total	1059%	1016%	152.03*	-0.21	-0.22
NAEP Reading (1971)	285%	286%	0.64	-0.17	0.01
NAEP Math (1971)	304%	306%	1.92	0.69*	0.03
<i>Effort</i>					
Studying 6+ hrs/wk (1987)	47%	35%	85.08*	0.90*	-0.31

*Notes:* (1) Some items were included beginning in later years; the first year for which data are available is in parentheses. These effect sizes may be smaller as they cover a shorter range of years. (2) The *t*-test is the difference between 1966 (or the first year of data collection) and 2009 using individual-level standard deviations (*SDs*) and *ns*. (3) The  $\beta$ s and *ds* are based on the data from all years; the  $\beta$ s use group-level *SDs* and *ns*, and the *ds* use individual-level *SDs*. (4) The *n* for SAT and NAEP test-takers in earlier years was not available. It was estimated to be half of the recent *ns* for calculation of the *t* values. (5) \*\*\**p* < .001.



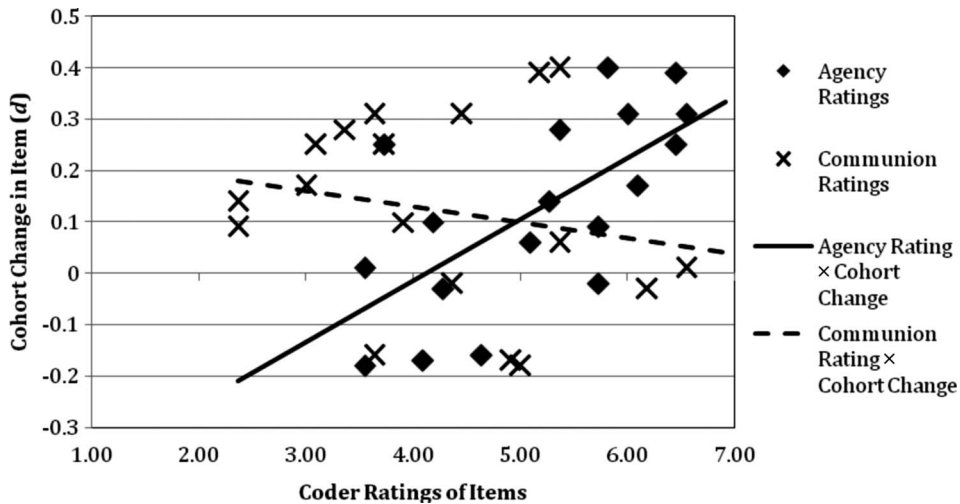
**FIGURE 1** Generational changes in college students' domain-specific self-evaluations, 1966–2009.

*Note:* “Understanding of others” was not asked in several years during the 1980s, producing the gap in the line.

Next, we sought to determine if the pattern of results fitted our prediction that agentic self-ratings would increase while communal and other traits would not. We correlated the change over time ( $d$ ) in each attribute with the coders' average ratings on agency and communion. As predicted, the attributes that increased the most were also rated as highly agentic,  $r(18) = .66, p < .01$ . There was no relationship between change over time and ratings of communalism,  $r(18) = -.20, ns$  (see Figure 2). The coders gave the highest agency ratings to intellectual self-confidence and leadership, two of the attributes with large increases. They gave the highest communal ratings to cooperativeness and understanding others, both of which showed very small changes ( $d = 0.01$  and  $-0.03$ , respectively). All of the attributes that increased significantly over time were rated as highly agentic ( $> 5$  on a 1–7 scale), with the exception of artistic ability and creativity.

We tested the trends over time for curvilinearity by entering the centered year and centered year squared into regression equations. The linear effect was stronger than the curvilinear effect for 14 of the 18 attributes, including all but one of the agentic attributes. Four had stronger curvilinear trends: math ability (peaking in the late 1980s), understanding of others (peaking in the 1990s; see Figure 1), popularity (peaking in the late 1980s), and cooperativeness (reaching lows in the early 2000s).

Figure 1 suggests that much of the increase on self-ratings of agentic attributes occurred between the 1960s and the 1980s, with smaller increases after that time. To quantify this possibility, we performed linear regressions before and after the midpoint of 1987–1988. For all of the agentic attributes except math ability, positive self-evaluations increased in a linear pattern during both time periods, with larger effect sizes before 1988 but continued changes afterward. For example, speaking



**FIGURE 2** The relationship between cohort changes in college students' domain-specific self-evaluations and coders' ratings of those self-evaluations on agency and communion.

*Note:* The solid line represents the association between self-evaluation changes over time and their rated agency; the dashed line represents the association between self-evaluation changes over time and their rated communion.

ability,  $\beta$  (group level) = 0.92,  $p < .001$ ,  $d$  (individual level) = 0.23 for 1966–1987, and  $\beta = 0.88$ ,  $p < .001$ ,  $d = 0.10$ , 1988–2009. For leadership ability,  $\beta = 0.96$ ,  $p < .001$ ,  $d = 0.37$  for 1966–1987, and  $\beta = 0.92$ ,  $p < .001$ ,  $d = 0.14$ , 1988–2009. For drive to achieve,  $\beta = 0.69$ ,  $p = .06$ ,  $d = 0.16$  for 1966–1987, and  $\beta = 0.73$ ,  $p < .001$ ,  $d = 0.09$  1988–2009.

Self-ratings on popularity, which the coders rated as both agentic and communal, increased until the 1980s and then declined,  $\beta = 0.93$ ,  $p < .001$ ,  $d = 0.36$  for 1966–1987, and  $\beta = -0.82$ ,  $p < .001$ ,  $d = -0.16$ , 1988–2009. Understanding others, a communal attribute, showed a similar pattern,  $\beta = 0.98$ ,  $p < .001$ ,  $d = 0.39$  for 1966–1987, and  $\beta = -0.64$ ,  $p < .001$ ,  $d = -0.11$ , 1988–2009.

### *Gender and Ethnicity*

Trends on 11 of the 18 attributes were nearly identical when analyzed separately for male and female students. Seven trends differed by more than  $d = 0.05$  by gender. Women's self-evaluations increased more than men's on computer skills ( $\beta$  for males = 0.39,  $ns$ ,  $d = 0.05$ ;  $\beta$  for females = 0.95,  $p < .001$ ,  $d = 0.22$ ), creativity ( $\beta$  for males =  $-0.31$ ,  $ns$ ,  $d = -0.02$ ,  $\beta$  for females = 0.88,  $p < .001$ ,  $d = 0.17$ ), and drive to achieve ( $\beta$  for males = 0.64,  $p < .001$ ,  $d = 0.19$ ;  $\beta$  for females = 0.92,  $p < .001$ ,  $d = 0.34$ ). Men increased more than women in self-evaluations of academic ability ( $\beta$  for males = 0.92,  $p < .001$ ,  $d = 0.24$ ;  $\beta$  for females = 0.72,  $p < .001$ ,  $d = 0.11$ ). For understanding others, males showed no significant change ( $\beta = 0.27$ ,  $ns$ ,  $d = 0.04$ ) whereas females declined ( $\beta = -0.43$ ,  $p < .04$ ,  $d = -0.13$ ). On popularity, males increased ( $\beta = 0.45$ ,  $p < .03$ ,  $d = 0.18$ ) whereas females showed no significant change ( $\beta = -0.06$ ,  $ns$ ,  $d = -0.02$ ). Males increased in their self-ratings of cooperativeness ( $\beta = 0.75$ ,  $p < .001$ ,  $d = 0.06$ ), whereas females declined ( $\beta = -0.46$ ,  $p < .05$ ,

$d = -0.03$ ). Overall, the pattern of increases in self-evaluations of agentic traits and no change or declines in communal traits held true for both men and women.

We examined the individual-level data from 1971 to 1998 to determine if shifts in the ethnic makeup of college samples confounded the changes over time. We performed regression analyses with year as the independent variable and the self-evaluations as the dependent variable, and then added dummy variables for race/ethnicity (White, Black, American Indian, Asian American, Mexican American, Puerto Rican). In most cases the  $\beta$  between year and self-ratings was unchanged when the controls for race/ethnicity were included; in the rest, the  $\beta$ s changed by only 0.01. Thus, as expected, the shifts in college populations' racial and ethnic makeup did not account for the increases in positive self-evaluations.

### *Objective Performance*

We wanted to address the possibility—however unlikely—that more positive self-evaluations by college students reflected their (a) increasing individual abilities or (b) increasing abilities relative to their peers. We first addressed increasing individual abilities using SAT scores, an objective measure of performance.<sup>3</sup> When matched by year and weighted by sample size, mean self-evaluations of writing ability were actually negatively correlated with mean verbal SAT scores ( $\beta = -0.84$ ,  $p < .001$ ), meaning that students evaluated their writing ability more favorably in years when verbal SAT scores were lower. There was not a significant correlation between self-evaluations of math ability and math SAT scores ( $\beta = 0.08$ , *ns*) or between self-evaluations of academic ability and total SAT scores ( $\beta = 0.23$ , *ns*).

We next addressed the possibility that college students have become increasingly skilled relative to the larger population of young people, calculating the difference between college-bound student performance (SAT scores) and the performance of the general population of people roughly their age in the same year (NAEP scores). Mean self-evaluations of writing ability were negatively correlated with relative skills on verbal tests,  $\beta = -0.50$ ,  $p < .01$ . Thus, students evaluated their writing abilities as superior in years with lower objective performance. Self-evaluations of math ability were unrelated to relative skills on math tests,  $\beta = -0.19$ , *ns*, and self-evaluations of academic ability were unrelated to relative skills on combined tests,  $\beta = 0.04$ , *ns*.

### *Grades and Effort*

We then addressed whether grade inflation was related to the increase in positive self-evaluations. Consistent with the cultural shift toward more positive evaluations by teachers and parents, American Freshman respondents reported markedly higher high-school grades in recent years compared to the past<sup>4</sup> (see Table 1). When matched by yearly averages, self-reported high-school grades were positively correlated with self-evaluations of writing ability ( $\beta = 0.74$ ,  $p < .001$ ), math ability ( $\beta = 0.45$ ,  $p < .05$ ) and academic ability ( $\beta = 0.87$ ,  $p < .001$ ). The difference between grades and objective performance (SAT scores) was positively correlated with self-evaluations, meaning that self-evaluations of ability were higher when grades outpaced performance: for writing ability,  $\beta = 0.89$ ,  $p < .001$ ; math ability,  $\beta = 0.48$ ,  $p < .01$ ; and academic ability,  $\beta = 0.48$ ,  $p < .01$ . Thus grade inflation, and/or the growing gap between grades and objective measures of performance, may partially

explain the rise in students' self-evaluations. Although in theory students should have shifted their standard for an average grade, and thus shifted their comparison point for their self-evaluations, considering oneself an "A" student may still increase students' self-perception of their skills.

Finally, perhaps self-evaluations of ability and grades have increased because students are working harder, apart from any connection to objectively measured performance. This does not appear to be the case; despite their higher high-school grades, students in recent years reported studying significantly *fewer* hours in high school than students in the late 1980s<sup>5</sup> (see Table 1). Thus, evaluations by others have grown more positive while effort has decreased, a possible reason why self-evaluations of abilities have increased. The decline in effort also runs counter to the increase in the number of students rating themselves as above average in their drive to achieve; when matched by year, mean self-evaluations on drive to achieve are negatively correlated with hours spent studying ( $\beta = -0.52$ ,  $p < .05$ ), so that students rated themselves higher in drive to achieve in years when, as a cohort, they studied for fewer hours.

## Discussion

Compared to their counterparts in previous generations, more recent college students believe they outperform their peers in agentic skills such as academic ability, leadership ability, public speaking ability, self-confidence, and writing ability. These analyses are based on a very large and nationally representative sample of first-year college students in the United States collected between 1966 and 2009 ( $N = 6.5$  million). These increases occurred despite the decreased selectivity of 4-year colleges over this time, which should have pushed comparisons with peers lower instead of higher, and were not explained by changes in objective performance or increased effort. They were, however, correlated with grade inflation.

Increases in positive self-views were limited to agentic traits and did not extend to communal traits such as cooperativeness, understanding others, or spirituality. This is consistent with previous research finding generational increases in agentic traits and either no change or declines in communal traits (Konrath et al., 2011; Twenge, 1997). Given that narcissism correlates highly with agentic traits but either nonsignificantly or negatively with communal traits (Campbell et al., 2002), these results are also consistent with studies finding a generational increase in narcissism (e.g., Stewart & Bernhardt, 2010; Twenge & Foster, 2010).

These results are consistent with other research revealing generational increases in individualistic traits and agentic self-views (e.g., Gentile et al., 2010; Twenge & Campbell, 2008) and accounts noting a cultural shift in the United States toward greater individualism (e.g., Baumeister, 1987; Fukuyama, 1999; Myers, 2000; Twenge, 2006; Yankelovich, 1981). The pattern of change, an overall linear trend with greater change from the 1960s to the 1980s and smaller increases between the 1990s and the 2000s, is very similar to the birth cohort differences in general self-esteem among college students (Gentile et al., 2010). These analyses suggest that the largest change in positive self-views occurred between Baby Boomers (in college 1960s–1970s) and GenXers (1980s–1990s), but that Millennials/GenMe (2000s–2010s) have continued the upward trend in seeing themselves as above average. Similar to self-esteem, domain-specific self-evaluations may have reached a ceiling.

*Generational Shifts in Positive Self-views: A Summary of Findings*

Most research finds more positive self-views among more recent generations, especially in individualistic areas. Younger generations such as Millennials/GenMe express more positive self-evaluations in agentic areas (the current results), are higher in narcissistic traits (Stewart & Bernhardt, 2010; Twenge & Foster, 2010), are more likely to believe they will perform well in important adult roles (Twenge & Campbell, 2008), express more self-satisfaction (Twenge & Campbell, 2008), and have higher expectations for their future educational and professional attainments (Reynolds et al., 2006). These results appear in both nationally representative samples and subject pool samples of college students, suggesting that sampling is not a major concern.

However, trends for general self-esteem vary depending on the age group studied. College students' and middle-school students' self-esteem increase with the generations in all available studies (Gentile et al., 2010; Twenge & Campbell, 2001, 2010), but high-school students' self-esteem either does not change (Trzesniewski & Donnellan, 2010; Twenge & Campbell, 2001) or shows smaller increases (Gentile et al., 2010; Twenge & Campbell, 2008). Why high-school students would show less evidence for generational change than other age groups in self-esteem is an important avenue for future research.

*Possible Causes for the Increase in Positive Self-views*

The increase in positive self-evaluations was not caused by improved skills—at least on the factors that we could test empirically using group-level statistics. Given the decreased selectivity of the sample of college students (Snyder & Dillow, 2010), self-evaluations should have decreased over time rather than increased if they are comparing themselves to all of their peers. If college students are instead comparing themselves to other college students, one might argue that ratings have increased because the referent group of other college students is now less select. However, the respondents themselves are also less select, balancing out any effect.

In some cases, such as verbal ability, self-evaluations of skills have increased even as objective measures of performance have declined. Similarly, students' self-evaluations of creativity increased 1990s–2000s even though objective measures of creativity declined over this time period (Kim, 2010).

Given the generational increases in other positive self-views, the most parsimonious explanation for the rise in domain-specific self-evaluations is that more recent college students think they are above average—not that more actually are above average. The shift in core cultural ideas toward individualism, high expectations, and even narcissism may explain the increases in positive self-views (e.g., Myers, 2000; Twenge, 2006; Twenge & Campbell, 2009). This cultural shift toward self-exaggeration was manifested in grade inflation that occurred, perhaps not coincidentally, at the same time as the increase in positive self-evaluations. Students may now see themselves more positively because feedback from others has become more positive. However, these positive views are apparently not due to increases in objective measures of performance or to more hours spent studying. In fact, reported study time has decreased as grades have increased, another indication that subjective assessments have become inflated out of proportion to reality.

Overall, these results point to a culture that has systematically increased students' self-evaluations while failing to increase actual abilities. This is consistent with the

general tenets of the self-esteem movement and a shift to narcissism in the society (e.g., Twenge & Campbell, 2009, 2010). However, increasingly positive self-views have apparently not led to improved abilities or effort, which is inconsistent with the general tenets of the self-esteem movement, which maintained that more positive self-views would lead to better performance. As suggested by the mutual constitution model, cultural changes in the value of self-admiration resulted in specific policies and behaviors (e.g., self-esteem-focused education, grade inflation), which subsequently increased self-evaluations.

Recent work on the above-average effect suggests that it can be caused by cognitive biases such as egocentrism and self-focus (Chambers & Windschitl, 2004; Kruger et al., 2008). In this case, egocentrism refers to the tendency to find information about the self more readily available than information about others. If more recent generations are more likely to suffer from the cognitive bias of egocentrism, they would be more likely to see themselves as above average. As narcissism (self-focus) has risen over the generations (Twenge & Foster, 2010) and empathy (other-focus) has declined (Konrath et al., 2011), greater cognitive egocentrism is a possible explanation for the increase in rating oneself above average. Another possibility is that recent students construe the attributes more broadly than previous generations, finding more ways they could consider themselves above average (Dunning, Meyerwitz, & Holzberg, 1989). This over-construal might be especially prevalent in ambiguous domains such as leadership ability and social self-confidence, and indeed those domains showed some of the largest changes over the generations.

A few attributes showed curvilinear trends with peaks in the late 1980s. Perhaps some general trend increased domain-specific self-evaluations between the late 1960s and the late 1980s, but cultural forces in the 1990s and 2000s lifted agentic attributes still further while encouraging a more tempered assessment of abilities in more communal areas (such as popularity and understanding others) and more arguably objective areas (such as math ability). This possibility is consistent with other data showing declines in communal attributes during this time period (e.g., empathy; Konrath et al., 2011). However, this explanation is speculative.

### *The Effects of More Positive Self-views*

Whether these significant shifts in positive self-evaluations are beneficial or harmful echoes the continuing debate over positive self-illusions in general. One perspective suggests that positive self-illusions are important for healthy functioning, coping, and goal pursuit, even when they are unrealistic (e.g., Taylor & Armor, 1996; Taylor & Brown, 1988). More recent perspectives suggest that positive self-evaluations can be both beneficial and problematic, depending upon other factors (e.g., Campbell & Campbell, 2009; Klein, Monin, Steers-Wentzell, & Buckingham, 2006). One practical implication is that if more entering college students believe that they outperform their peers, they may set unrealistically high goals for themselves. In fact, recent generations are much more likely to expect to earn a graduate degree and work in a professional job by age 30, even though the number who actually do so has remain unchanged (Reynolds et al., 2006). It is not clear if these unrealistically high goals have had negative consequences, such as disappointment, wasted time, or negative affect, or if they could also have positive consequences by promoting the achievement of intermediate goals.

The rise in positive self-views could also have negative effects. An inflated sense of self is typical of narcissism, which can lead to failure based on unrealistic self-assessment (see Twenge & Campbell, 2009, for a summary). For example, college students with inflated self-evaluations earned lower GPAs and were more likely to drop out of college (Robins & Beer, 2001). In a stock-market simulation, narcissistic students were overconfident and bought too many risky stocks, leading them to perform poorly in a down market (Foster, Reidy, Misra, & Goff, 2010).

### *Limitations*

We can be very confident that the American Freshman sample is representative of the population of first-year students at US 4-year colleges and universities, as the survey weights its results to be representative of that population and includes data from a very large number of individuals ( $N=9$  million, 6.5 million for the self-evaluation questions) from campuses across the United States. However, we cannot generalize these results to the entire population of 18- and 19-year-old young adults in the United States, as most are not enrolled in a 4-year college. The respondents in the American Freshman survey come from households with higher income than the national average (Pryor et al., 2007), and are likely above average in academic ability. This population also under-represents Black and Latino Americans and over-represents White and Asian Americans compared to the US population. However, the available data suggest that changes in the racial and ethnic composition of college samples were not the cause of the generational increase in positive self-evaluations, nor were changes in gender composition. As college students are the segment of their generation most likely to become its future leaders, professionals, and managers, they are an important group to study.

Our analyses of the relationship between objective ability and self-evaluations were conducted at the group level as individual-level data were not available. Thus, we can document that average self-evaluations increased at the same time that average objective performance declined or was unchanged, but cannot examine the discrepancy between self-evaluations and objective performance on an individual level, which would give a more precise view of the prevalence of self-enhancement.

A time-lag study such as this one, which surveys same-age respondents at different points in time, has the strength of separating the effects of age and time. However, any effects could be due to time period rather than solely to birth cohort/generation. Thus, it is possible that Americans of all ages have developed more positive self-views between 1966 and the present. Both possibilities demonstrate change due to time, but a time-period effect would suggest that the change was not limited to a particular generation. Generally, however, generational effects are stronger than time-period effects (Schaie, 1965).

### *Conclusion*

The American Freshman survey is the largest known sample of American college students surveyed over several decades. Analyses of the responses of 6.5 million students show clear increases in the number who believe they outperform their peers in important areas of endeavor, adding to a growing body of evidence showing increasingly positive self-views among America's young people.



## Notes

1. We estimated the individual-level *SDs* using the aggregate data. For example, if 60% of respondents rated themselves above average on a particular trait in a particular year (and thus 40% do not), the individual-level *SD* of that sample is 49.
2. The individual-level data from 1966 were not retained (Pryor et al., 2007). American Freshman datafiles from 1999 and later are not publicly available, although researchers can apply to HERI for access to the individual-level data from 1999 to 2006. We applied to access the 1999–2006 individual-level data on these variables in April 2010, but were denied access. HERI currently does not allow any outside access to the 2006–2009 individual-level data. In contrast, the aggregate data are available for all years the survey has been conducted, 1966–2009.
3. We do not report *ds* (individual-level effect sizes) for the regressions between self-evaluations and SAT scores as these analyses are most relevant for group-level conclusions (e.g., the relationship between a cohort's objective performance and the cohort's self-evaluations).
4. Only 7.3% of college students in 1966 reported earning an A or A+ average in high school, compared to 23% in 2009. The number earning an A– average or above was 19% in 1966 and 48% in 2009. As late as 1998, the most common average grade reported for entering college students was a B; by 2009 it was an A–. There was also a decrease in the number earning lower grades. In 1966, 22% of students entered college with a C average or below, compared to only 5% in 2009. Note that grades were self-reported, so if students became increasingly likely to exaggerate their grades, that could account for some of the change.
5. In 1987, 21% of students reported studying 11 or more hours a week, compared to 13% in 2009. At the other end of the spectrum, 24% of students in 1987 did 2 or fewer hours of studying, compared to 38% in 2009. Only 9% of 1987 students said they studied less than one hour a week in high school; that jumped to 15% in 2009.

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