

# How the Rich (and Happy) Get Richer (and Happier): Relationship of Core Self-Evaluations to Trajectories in Attaining Work Success

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In this study, the authors linked core self-evaluations to job and work success. Utilizing a dynamic design from participants in the National Longitudinal Surveys of Youth (NLSY79), core self-evaluations were hypothesized to predict individuals' intercepts (starting levels of success), and their growth trajectories (slope of individuals' success over time) with respect to job satisfaction, pay, and occupational status. Results indicated that higher core self-evaluations were associated with both higher initial levels of work success and steeper work success trajectories. Education and health problems that interfere with work mediated a portion of the hypothesized relationships, suggesting that individuals with high core self-evaluations have more ascendant jobs and careers, in part, because they are more apt to pursue further education and maintain better health.

*Keywords:* core self-evaluations, personality, job satisfaction, pay, occupational status

Why do some people end up better off than others? Social scientists have tried for decades to answer this question. Given that careers are so vital to material and psychological well-being, much of the exploration of inequality has been focused on the predictors of career success. Most studies have measured the success of individuals relative to their cohorts; rarely is success examined as a dynamic, within-person phenomenon. Yet, careers unfold across the lifespan, and so should our conceptions of career success. Here, the concept of a career growth trajectory—the pace and form of change in objective and subjective markers of success—broadens the definition of career success so that it is not only one's status relative to others at point B that defines success but also how far and how quickly one has moved since point A.

In this article, we propose that career growth trajectories are characterized by a process of cumulative advantage in which early achievement sets the stage for a more rapid growth rate, deepening inequality over time. The notion of cumulative advantage as a driver of inequality in career success has been addressed most explicitly in sociological research on scientific careers. Merton (1968) identified a *Matthew Effect* in which productivity and rewards accumulate disproportionately for those scientists who distinguish themselves at the outset of their careers. Although considerable empirical research on scientific careers has followed (see DiPrete & Eirich, 2006, for a review), sociologists have done little research on the notion of cumulative advantage as a feature of careers in general (DiPrete & Eirich, 2006).

Merton's (1988) arguments regarding the mechanisms underlying the Matthew Effect suggest that it might be characteristic of

careers more broadly. First, he conjectured that the Matthew Effect arises because society places a premium on precocity. Those who are precocious—as demonstrated by early achievements—are rewarded with inducements and expectations that not only privilege them with greater resources but also motivate further effort. Second, Merton (1968) held that career growth has a basis in certain psychological characteristics, particularly self-assurance. Of Nobel laureates, he noted that “They exhibit a distinct self-confidence . . . a great capacity to tolerate frustration in their work, absorbing repeated failures without manifest psychological damage” (p. 61). If these motivational characteristics are important to career progress in general, then one might expect to see the Matthew Effect widely in evidence.

This article has three interrelated objectives. First, we set out to determine whether core self-evaluations might influence both the initial success that triggers the Matthew Effect as well as the pattern of cumulative advantage that characterizes it. Core self-evaluations—the basic assumptions people make about themselves (Judge, Locke, & Durham, 1997)—are used to predict both between-individual differences in early career success and within-individual career growth trajectories (Bryk & Raudenbush, 1987). Thus, this is the first study to investigate dispositional influences on individuals' career trajectories. Second, we seek to shed light on why core self-evaluations might influence career growth trajectories by examining rates of change in two possible mediators: educational attainment and health problems that interfere with work. Finally, we demonstrate that inequality in career success should be considered not only as a finite point that individuals reach after years of working but as a dynamic process in which the very pace at which individuals experience career growth varies.

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## Theoretical Background and Hypotheses

### *Defining Career Success*

According to Hughes (1937, 1958), objective and subjective aspects of careers are distinct but intertwined—the visible or

objective markings of career success (status, wealth) are balanced against one's own conception of success and its implications for one's identity. Thus, as did Judge, Cable, Boudreau, and Bretz (1995), we define career success as the real and perceived achievements individuals have accumulated as a result of their work experiences. To this static definition, a temporal element should be added. Careers are an unfolding process (Hughes, 1937). Just as it is incomplete to flatly state that because A earns more than B, A is more successful (thus ignoring the subjective career), it is also limiting to draw inferences about career success from snapshots at a given point in time. Here the concept of a career trajectory is useful. A trajectory can be defined as "a curve or surface passing through a given set of points, or intersecting each of a given series of curves or surfaces according to a given law, e.g. at a constant angle" (Oxford English Dictionary, 2007). As noted by Raudenbush (2001), a person's trajectory is critical to understanding many psychological processes, including, we argue, career success. Therefore, career success can be viewed as a phenomenon with objective and subjective elements, each of which has a trajectory that is established over time.

In operationally defining career success, a necessary task is elucidating the variables that are thought to be indicators of objective and subjective success. If extrinsic, or objective, career success can be defined as "indicators of career success that can be seen and therefore evaluated objectively by others" (Ng, Eby, Sorensen, & Feldman, 2005, p. 368), the most obvious—and most widely used—measure of extrinsic career success is pay. Indeed, virtually any treatment of objective or extrinsic career success begins with pay (Heslin, 2005; Judge et al., 1995; Ng et al., 2005; O'Reilly & Chatman, 1994).

Another powerful indicator of achievement is occupational status (Hughes, 1937), defined as societal views of the power, prestige, and authority provided by an occupation (Blaikie, 1977; Schooler & Schoenbach, 1994). Ganzeboom and Treiman (1996) argued that occupational status measures "reflect the classical sociological hypothesis that occupational status constitutes the single most important dimension in social interaction" (p. 203), and Featherman, Jones, and Hauser (1975) labeled occupational status as sociology's "great empirical invariant" (p. 331). As a result, sociologists often view occupational status as the most important sign of success in contemporary society (Korman, Mahler, & Omran, 1983).

Compared with the indicators of extrinsic career success, there is less agreement on the markers of subjective, or intrinsic, career success. Heslin (2005) argued convincingly that the use of job satisfaction as a proxy for intrinsic career success, as used by some authors (e.g., Boudreau, Boswell, & Judge, 2001; Judge et al., 1995), is flawed. Feelings about one's current job might not take into account prior career achievements (or the lack thereof), potential opportunities (or the lack thereof), or other factors one uses to evaluate whether a career is going well. Perhaps the most widely used measure of career satisfaction (e.g., Greenhaus, Parasuraman, & Wormley, 1990) asks respondents to evaluate their feelings about their progress toward overall and specific career goals in several domains (i.e., income, advancement, skills development) rather than simply asking about feelings toward their current jobs. Yet, Heslin also pointed out that measures such as this one are deficient because they do not capture the numerous dimensions that might enter into people's assessments of their success. Thus,

there seems to be a double bind in the measurement of intrinsic career success.

Given the shortcomings pointed out by Heslin (2005), it would be preferable to use an instrument designed specifically to measure career satisfaction rather than job satisfaction when the former is the object of interest, as in this article. Nevertheless, because of our use of archival data, we had little choice but to use job satisfaction to tap into subjective career success; however, we also believe that job satisfaction trajectories are particularly relevant to an assessment of intrinsic success. At one point in time, job satisfaction may tell us little of how someone feels about his or her career. Yet, the pattern of job satisfaction over time is more telling. In general, it seems likely that someone who has experienced an upward trend in job satisfaction would evaluate his or her career more positively than someone who has had less growth, declining satisfaction, or many fluctuations in job satisfaction over the years. Just as there are multiple facets of extrinsic success, there are multiple facets of intrinsic success. Growth in pay is not the only basis for assessing extrinsic success, but neither is it to be excluded. Similarly, longitudinal trends in job satisfaction are not the complete picture, but they are an important dimension of subjective well-being in the career domain over time.

### *Core Self-Evaluations and Early Career Success*

Vocational psychology is rooted in an interest in the factors that influence how young people enter the workforce and begin their careers (Baker, 2002). Implicit in this preoccupation is the recognition that early career success might set the tone for long-run success. Rosenbaum (1979) lamented that researchers had done a good job of describing early career selection and socialization processes but had failed to examine the effects of these early career processes on long-term career patterns. Echoing the concept of the Matthew Effect, Rosenbaum's (1979) tournament mobility model of career development held that "assessments in an employee's first few years have profound and enduring effects on later career outcomes" (p. 223). Rosenbaum found some evidence that early upward mobility in a corporation predicted career outcomes more than later promotions.

Perhaps, as Merton (1988) argued, observers assign disproportionate worth to early achievements, but this compounding growth pattern could also be due to the learning and development quality of one's early experiences. Berlew and Hall (1966) found that the degree of challenge in an individual's initial job assignment was significantly related to performance and salary progress 5 to 8 years later. Likewise, Kaufman (1974) found that challenging early work assignments were related not only to strong initial performance but also to the maintenance of competence and performance by engineers throughout their careers. Overall, this research indicated that early successes set individuals on course for stronger career progress over time. Much remains to be learned, however, about intrinsic factors that may bring about these early successes or facilitate the translation of early into later success.

Individuals with high core self-evaluations may be more likely to obtain early career success. They are more motivated, perform better, tend to hold more challenging jobs, and are more satisfied with their jobs (for a review, see Judge & Hurst, 2007a). Moreover, research on the individual core traits from the careers literature has suggested that they influence the quality of early career

experiences. Neuroticism has been linked to career self-efficacy and interests (Hartman & Betz, 2007; Nauta, 2004; Wang, Jome, Haase, & Bruch, 2006), while neuroticism, external locus of control, and low self-esteem are associated with career indecision among young adults (Bacanli, 2006; Lounsbury, Tatum, Chambers, Owen, & Gibson, 1999; Shafer, 2000). Previous research has also demonstrated that college students with positive core self-evaluations are more likely to attain more (higher goal attainment) and to be happier with what they do attain (greater job and life satisfaction) because they tend to set goals for reasons that are consistent with their values and aspirations rather than out of feelings of guilt, obligation, or a primary concern with extrinsic reward (Judge, Bono, Erez, & Locke, 2005). Thus, existing empirical evidence on the individual core traits, as well as more direct evidence on the overall core concept, suggests that core self-evaluations affect early career decision making and motivation, influencing the quality of early career experiences and satisfaction with those experiences.<sup>1</sup>

*Hypothesis 1a:* Core self-evaluations positively predict between-individual differences in early career levels of job satisfaction such that those who score high on core self-evaluations have higher levels of job satisfaction than those who score low on core self-evaluations.

*Hypothesis 1b:* Core self-evaluations positively predict between-individual differences in early career levels of pay such that those who score high on core self-evaluations earn higher levels of pay than those who score low on core self-evaluations.

*Hypothesis 1c:* Core self-evaluations positively predict between-individual differences in early career occupational status such that those who score high on core self-evaluations work in more prestigious occupations than those who score low on core self-evaluations.

### *Core Self-Evaluations and Career Success Trajectories*

Core self-evaluations and the individual core traits have previously been linked to mid-career outcomes like job satisfaction (Judge, Bono, & Locke, 2000) and income (Judge & Hurst, 2007b). In this article, we seek to determine whether the advantages found for people with positive core self-evaluations stem not only from their starting out on a better footing, but also from faster career growth, consistent with the Matthew Effect. Core self-evaluations might influence differentiation of cohorts' career paths via, as Merton (1968) suggested, their continued effect on motivations and behaviors throughout the life span. It has been suggested, in fact, that the influence of personality on occupational circumstances may increase as the career develops because the processes through which the two become linked unfold gradually and because jobs become attached more to personal identity, rather than need, over time (Roberts, Caspi, & Moffitt, 2003).

Logically, the positive effects of core self-evaluations on job complexity, goal attainment, and job performance should lead to greater opportunities to advance in one's career. Prior research has, in fact, found job performance to be positively related to pay raises and promotions (Harris, Gilbreath, & Sunday, 1998), and we have

already cited evidence linking job challenge to advancement (Berlew & Hall, 1966; Kaufman, 1974). In addition, core self-evaluations seem to affect the likelihood, duration, and health effects of unemployment as well as the success of job changes. People with high core self-evaluations search for jobs more assiduously when unemployed (Wanberg, Glomb, Song, & Sorenson, 2005) and experience sustained good health and life satisfaction during spells of unemployment (McKee-Ryan, Song, Wanberg, & Kinicki, 2005). On the other hand, people with low self-esteem, one of the core traits, are more likely to be unemployed or to hold temporary, rather than permanent, jobs (Salmela-Aro & Nurmi, 2007). Furthermore, men low in emotional stability (i.e., high in neuroticism) are more likely to experience job changes that are shifts downward in socioeconomic status (Gelissen & Graaf, 2006).

The effects of core self-evaluations on employment stability and extrinsic career growth might be due in part to self-verification processes. Self-verification theory (Swann & Read, 1981) suggests that people seek out environments and interactions that enable them to maintain their self-views, even when those views are negative. As evidence, people with low self-esteem are more likely to remain in jobs with flat wage profiles (Schroeder, Josephs, & Swann, 2006), while they show signs of waning organizational commitment in jobs where they are treated fairly (Wiesenfeld, Swann, Brockner, & Bartel, 2007). Although research on the role of self-verification in employment contexts is nascent, it already suggests that people with low self-views leave or are less content with job conditions that provide positive feedback and bode well for future success. This may lead to more career plateauing, lateral or downward mobility, and employment instability.

People with high core self-evaluations may also be well-equipped psychologically to take increasing amounts of satisfaction and fulfillment from their work. In particular, people with high core self-evaluations might draw greater satisfaction from their extrinsic success. As Judge et al. (1995) noted, people do not uniformly experience gains in career satisfaction as their income and status rise; extrinsic and intrinsic satisfaction are only modestly correlated. An emerging area of positive psychology (Diener & Seligman, 2004) suggests that some individuals are better able to capitalize on positive experience and, in so doing, experience increments to well-being greater than those derived from the experiences themselves. Recent studies have found that positive self-views enhance the tendency to savor positive experiences and to experience enhanced affect and self-relevant thoughts as a result of doing well (Bryant, 2003; Wood, Heimpel, & Michela, 2003; Wood, Heimpel, Newby-Clark, & Ross, 2005). Thus, it appears that individuals with high core self-evaluations may experience stronger psychic rewards from their career successes, triggering "upward spirals" in well-being (Fredrickson, 1998).

Based on the above arguments, we expect that individuals with higher core self-evaluations will have steeper career success growth trajectories than those with lower core self-evaluations, for both extrinsic (pay and occupational status) and intrinsic (job satisfaction) success.

<sup>1</sup> By "between-individual differences in early career success," we mean the level of career success each individual had achieved at the beginning of the study (i.e., participants' initial, or Time 1, level of job satisfaction, pay, and occupational status).

*Hypothesis 2a:* Core self-evaluations positively predict growth in job satisfaction over time. Specifically, the growth trajectories in job satisfaction will be more positive for individuals with higher core self-evaluations than for individuals with lower core self-evaluations.

*Hypothesis 2b:* Core self-evaluations positively predict growth in pay over time. Specifically, the growth trajectories in pay will be more positive for individuals with higher core self-evaluations than for individuals with lower core self-evaluations.

*Hypothesis 2c:* Core self-evaluations positively predict growth in occupational status over time. Specifically, the growth trajectories in occupational status will be more positive for individuals with higher core self-evaluations than for individuals with lower core self-evaluations.

### *The Mediating Roles of Education and Health*

There is perhaps no variable more profoundly associated with career success than education (Elman & O'Rand, 2004; Herrnstein & Murray, 1994; Ng et al., 2005; Scullin, Peters, Williams, & Ceci, 2000). Human capital theory has long considered the career advantages bestowed by education. As Xie and Wu (2005) concluded, "The relationship between earnings and education in market economies is well known: Human capital theory explains that a large gradation in earnings by level of education reflects returns to individuals' investment in education" (p. 425). Indeed, these authors argued that, while the effect of years of education on earnings may vary by the type of economy—the slope being steeper in market than state-run economies—in both types of economies, increases in education over time lead to increases in pay over time. Furthermore, there is evidence for a Matthew Effect in the relationship between education and career success. Elman and O'Rand (2004) found that, among individuals who pursued postsecondary education and credentials, those who did so early in their careers generally received greater wage boosts from their schooling than did those who returned to school later. Also, Hurley-Hanson, Wally, Purkiss, and Sonnenfeld (2005) found that having a college degree was positively associated with managerial career attainment, but only for those who had gotten their degree before entering the firm. Thus, it is not only getting education that is important, but the pace at which one does so.

What might this have to do with core self-evaluations? We have argued that individuals with high core self-evaluations seek and accept progressively higher levels of challenge in their careers. Most people are aware that advancement in their careers may require some amount of formal training. Thus, in pursuing greater challenge, individuals with high core self-evaluations may also be more likely to pursue additional formal education. This likelihood is supported by findings that specific core traits are associated with educational attainment (Coleman & DeLeire, 2003; Flouri, 2006; Waddell, 2006). In particular, a meta-analysis by Colquitt, LePine, and Noe (2000) revealed that two core traits—internal locus of control and anxiety (a facet of neuroticism)—were related to training motivation. Also, Waddell (2006) found that adolescents with poor self-esteem, measured in 1972, had achieved fewer years of formal education by 1986 than had their peers with higher

self-esteem. Accordingly, we believe that education is partially responsible for the hypothesized effect of core self-evaluations on career success growth trajectories.

*Hypothesis 3:* Growth in education partly mediates the effect of core self-evaluations on growth in (a) job satisfaction, (b) pay, and (c) occupational status over time.

There is little research on how individual health status may affect career development. Some evidence indicates that poor physical and mental health create obstacles to launching a career. Ek, Sovio, Remes, and Järvelin (2005) found that adolescents with poor subjective health were less likely to have successfully entered the labor market by age 31. Another study by Margit, Vondracek, Capaldi, and Porfeli (2003) found that men ages 20 to 23 with mental health problems were less likely to have been employed during the full 4-year course of their study. Furthermore, physical and mental health are related to work–family conflict (Britt & Dawson, 2005), job satisfaction (Cass, Siu, Faragher, & Cooper, 2003), absenteeism (M. C. Jones, Smith, & Johnston, 2005; Martocchio, Harrison, & Berkson, 2000), and productivity (Adler et al., 2006; Burton et al., 2005; Kessler et al., 2006; Keyes & Grzywacz, 2005). Thus, in addition to creating obstacles to launching a career, health problems may interfere with the ability to sustain a career and may dampen one's subjective experience of the job.

As they age, people normally experience health declines that can compromise career progress, but there are individual differences in the degree to which this occurs. Core self-evaluations might affect health problems in several ways. First, they may affect objective health. Individuals high in neuroticism tend to select themselves into more stressful situations (Bolger & Schilling, 1991; Bolger & Zuckerman, 1995), engage in more risky health behaviors (Cooper, Agocha, & Sheldon, 2000; Malouff, Thorsteinsson, & Schutte, 2006), and have more accidents at work (Clarke & Robertson, 2005), and they are more likely to be diagnosed with mental health disorders (Cassin & von Ranson, 2005; Malouff et al., 2006). Control beliefs have been implicated in health behaviors in thousands of studies (see Walker, 2001). Furthermore, meta-analytic evidence has suggested that self-esteem and self-efficacy are positively associated with health-promoting behaviors ( $\rho = .39$  and  $.32$ , respectively), even more so than stress, income, and education (Yarcheski, Mahon, Yarcheski, & Cannella, 2004).

Core self-evaluations might also color interpretations of one's health status, which contribute to evaluations of well-being over and above the effects of objective health (Brief, Butcher, George, & Link, 1993). According to the transactional theory of stress (Lazarus & Folkman, 1984), personality should affect whether stressors—such as illness—are appraised as threatening or challenging. There is evidence that negative core self-evaluations lead to more negative interpretations of objective circumstances (Best, Stapleton, & Downey, 2005; Judge et al., 2000), a tendency that likely extends to evaluations of health as well.

There is already evidence that education contributes to a pattern of cumulative advantage in health trajectories so that those with higher education have better health early in adulthood and experience lower rates of decline as they age (Mirowsky & Ross, 2008). Given their impact on health behaviors and subjective assessments of health, core self-evaluations are likely to exert an

effect similar to that of education on health trajectories. Indeed, in one study, people who were psychologically healthy early in adolescence were also more likely to experience an upward trend in mental health as they aged (C. J. Jones, Livson, & Peskin, 2006). In another large-sample study of men, emotional stability negatively affected growth in psychological and physical health symptoms (Aldwin, Spiro, Levenson, & Cupertino, 2001). Thus, we expect that people with low core self-evaluations should experience greater increases over time in the degree to which health problems interfere with their work which, in turn, hampers progress in objective indicators of career success and the ability to derive greater levels of satisfaction from their jobs as their careers progress.

*Hypothesis 4:* Growth in health problems partly mediates the effect of core self-evaluations on growth in (a) job satisfaction, (b) pay, and (c) occupational status over time.

## Method

### *Participants and Procedure*

Participants were individuals enrolled in the National Longitudinal Survey of Youth (NLSY79), a study commissioned and operated by the Bureau of Labor Statistics, U.S. Department of Labor. The NLSY79 is a nationally representative sample of over 12,000 young men and women who were 14–22 years old when first surveyed in 1979 (and thus are 43–51 years old in 2008). Participants were interviewed, typically in their homes, annually through 1994 and are currently interviewed on a biennial basis; we studied individuals through 2004. Over the course of the study, participants have been interviewed about many topics. However, the topics of particular concern have been vocational training and labor force preparation, labor force participation and occupational outcomes, and various background and socioeconomic data. NLSY79 participants reside in all 50 states. Participants in the NLSY79 are not identified by name but rather by a unique ID number (which ranges from 1 to 12,686) that is not attached in any way discernable to outside researchers utilizing the data.

Although the original sample contained 12,686 participants, naturally, sample attrition has occurred over the nearly 30-year span of the study. Funding constraints led to reduction of the sample at two occasions: 1,079 and 1,643 individuals were dropped in 1984 and in 1990, respectively.<sup>2</sup> With these exceptions, sample attrition has been relatively low, averaging less than 10% per year. In 2004, 7,660 of the original 12,686 individuals remained in the study; excluding those who were intentionally dropped as described previously, this amounts to a retention rate of 76.88%. In general, sample attrition has varied to some degree by sample characteristics, though not dramatically so. For example, in 1979, 49.5% of the sample was female and 50.5% was male; by 2004, this proportion had increased to 52.0% for women and 48% for men.

### *Measures*

*Job satisfaction.* Job satisfaction was measured each year with the following interviewer question: “How do you feel about your job with [Name of employer]? Do you like it very much, like it fairly well, dislike it somewhat, or dislike it very much?” Inter-

viewers scored responses on a 1 (*like it very much*) to 4 (*dislike it very much*) scale. To make scores more interpretable, we recoded responses to 4 (*like it very much*), 3 (*like it fairly well*), 2 (*dislike it somewhat*), and 1 (*dislike it very much*).

*Pay.* The amount of pay received each year was assessed with participants’ responses to two open-ended interviewer questions: (a) “Not counting any money you received from your military service, in [YEAR], how much did you receive from wages, salary, commissions, or tips from all jobs, before deductions for taxes or anything else?” and (b) “How much total income did you receive during [YEAR] from the military before taxes and other deductions?”<sup>3</sup> The responses to these two questions were added to form a Total Pay measure for each time period. To measure pay in real terms, and thus separate real wage growth from inflationary growth, we adjusted wage rates based on the Consumer Price Index for each year. Thus, all wages were adjusted to reflect present value by using the Consumer Price Index (see <http://www.bls.gov/cpi/>).

*Occupational status.* Occupational status was measured with the two-digit Duncan socioeconomic index score, which assigns a score representing the prestige of various occupations (see Duncan, 1961). Although Duncan scores were originally based on subjective estimates, Duncan demonstrated that the ratings are substantially correlated with other markers of socioeconomic status (Duncan, 1961). Duncan scores have been widely used in sociology research (see Hauser & Warren, 1997). In the NLSY79, interviewers asked participants to report their current occupations, which were coded according to the three-digit industry and occupation codes (U.S. Bureau of the Census, 1970). These occupational codes were then converted to Duncan codes, which are rated on a 0–100 scale (though no occupation is as low as 0 or as high as 100). Sample scores include judge = 93; architect = 85; economist = 74; social worker = 64; 50 = clergy; registered nurse = 44; jeweler = 36; mechanic = 27; construction worker = 12; garbage collector = 8.

*Educational attainment.* Each year, the interviewer asked participants to report the highest grade of school that they had ever completed. Participants were instructed to include in their report years of college, including any graduate school training.

*Health problems interfering with work.* Each year, the interviewer asked participants “Are you limited in the amount of work you do because of your health?” Responses were coded 1 (*yes*), 0 (*no*), for each year.

<sup>2</sup> The original sample of 12,686 individuals included two supplemental random samples: (a) 5,295 individuals who were oversampled from Hispanic, Black, and economically disadvantaged non-Black/non-Hispanic households; and (b) a military sample of 1,280 individuals who were enlisted in one of the four branches of the armed services. Due to funding constraints, 1,079 individuals from the military supplemental sample were dropped after 1984, and 1,643 individuals from the economically disadvantaged non-Black/non-Hispanic supplemental sample were dropped after 1990. These exclusions did not dramatically alter the composition of the sample in terms of key variables such as race and gender.

<sup>3</sup> In any given year, only 5% of participants earned military income. However, for numerous participants in the sample, military income was their primary means of household income. Thus, to avoid introducing an unnecessary source of measurement error into the Pay measure, we included military income in our calculations. However, results were nearly identical when military income was excluded.

*Core self-evaluations.* Since the core self-evaluations concept was developed relatively recently (the first empirical study appeared in 1998), it obviously is not directly contained in the NLSY79 (initiated in 1979). However, items closely resembling the Judge, Erez, Bono, and Thoresen (2003) Core Self-Evaluations Scale (CSES) were assessed in the NLSY79. Based on the CSES, we selected 12 items in the NLSY79 database based on their similarity to the 12-item CSES (see the Appendix). Two items measured locus of control (Items 1–2), 5 assessed self-esteem (Items 3–7), 2 measured neuroticism (Items 8–9), and 3 items measured generalized self-efficacy (Items 10–12).

One means of evaluating construct and content validity is expert judgment (Cronbach & Meehl, 1955; Schriesheim, Powers, Scandura, Gardiner, & Lankau, 1993). Accordingly, we had seven individuals (four faculty members, two fourth-year doctoral students, and one postdoctoral fellow) who have substantial expertise in personality and organizational psychology research (a total of 66 years of experience in academia and more than 90 publications in the past 15 years) evaluate the items. These individuals were not informed of the purpose of the study, nor did they have independent knowledge of the study or of the measures involved. Individuals evaluated the 12 items in the measure to determine “whether each item was a good indicator of core self-evaluations.” Individuals used a 5 (*definitely*), 4 (*probably*), 3 (*unsure*), 2 (*probably not*), and 1 (*definitely not*) response scale. As a point of comparison, because conscientiousness and extraversion are related to but distinct from core self-evaluations (Judge, Erez, Bono, & Thoresen, 2002), the 8-item Conscientiousness scale and the 10-item Extraversion scale from the International Personality Item Pool (Goldberg, 1999) also were included. These 30 items were randomly ordered.

The average rating for the 12 purported core self-evaluations items was  $M = 4.54$  ( $SD = 0.31$ ). The average rating for the 8 Conscientiousness items was  $M = 1.96$  ( $SD = 0.39$ ). The average rating for the 10 Extraversion items was  $M = 1.66$  ( $SD = 0.29$ ). Across the seven raters, the lowest rating for any purported core self-evaluations item was higher than the highest rating of any of the Conscientiousness or Extraversion items and, across raters, these differences were all significant ( $p < .01$ ). Thus, on both an absolute and relative level, it appears that, in the eyes of the experts, the 12 items are strong indicators of the core self-evaluations concept.

To further assess the validity of the measure, we administered the NLSY79 core self-evaluation measure, along with the CSES and measures (John & Srivastava, 1999) of the Big Five traits (except for Neuroticism, which we excluded since it is part of the core self-evaluation framework; Judge et al., 1998), to four independent samples of undergraduate students (combined  $N = 1,991$ ). In the four samples, the NLSY79 core self-evaluation measure had acceptable levels of reliability ( $\alpha_1 = .83$ ;  $\alpha_2 = .86$ ;  $\alpha_3 = .80$ ;  $\alpha_4 = .84$ ) and showed high levels of convergent validity with the CSES ( $r_1 = .82$ ;  $r_2 = .83$ ;  $r_3 = .78$ ;  $r_4 = .82$ ). Moreover, the NLSY79 core self-evaluation measure and the CSES showed almost identical correlations with the four Big Five traits. For Conscientiousness, across the four samples,  $\bar{r}_{NLS} = .34$  and  $= .33$ . For Agreeableness,  $\bar{r}_{NLS} = .27$  and  $= .26$ . For Extraversion,  $\bar{r}_{NLS} = .41$  and  $\bar{r}_{CSES} = .41$ . For Openness,  $\bar{r}_{NLS} = .28$  and  $\bar{r}_{CSES} = .27$ . Thus, the NLSY79 core self-evaluation measure and the CSES correlated quite similarly with other traits.

*Age, sex, and race.* At the onset of the study, interviewers asked study participants to report their date of birth (current age was computed by subtracting the year of birth from 2007), sex (coded 1 = female, 0 = male), and race (coded 1 = White, 0 = other ethnicities).

### Analyses

Data were analyzed with hierarchical linear modeling (HLM 6.0; Raudenbush, Bryk, Cheong, & Congdon, 2004). In estimating changes (growth trajectories) in the criteria, we used the analytical approach recommended by Bryk and Raudenbush (1987). Specifically, to study changes in an outcome variable, one can use time as a within-individual measure of growth rate, and then use Level-2 variables (between-individual differences) to predict differential growth rates. In their example, they used age in months to predict student test scores, where both variables were measured within individuals with repeated measures over time. The authors then used a Level-2 individual difference (whether students were native English or Spanish speakers) to predict differential growth rates in test scores. Our analytical approach is the same, except that the time unit is year of study rather than age (though age is controlled), the outcome variable is work success rather than test scores, and the Level-2 variable is a personality trait (core self-evaluations).

A preliminary step in conducting HLM analyses is to determine that the data are indeed multilevel, which entails demonstrating substantial between- and within-individual variability (e.g., showing that job satisfaction differs significantly between individuals and also showing that job satisfaction varies significantly within individuals). The results suggested that the percentage of the total variation that was within-individual was as follows: job satisfaction = 78.91%; pay = 66.74%; occupational status = 54.50%; education = 37.60%; and health interfering with work = 88.48%. Since the null model results showed significant within-individual variability for each of these variables, multilevel modeling of the data is appropriate for each outcome variable.

Because individuals did vary in their ages (by up to 8 years), to avoid confounding age with any of the effects observed, age was used as a predictor variable in all analyses. Because the work outcomes may vary by sex and race, we also controlled for these variables. Finally, because pay may influence job satisfaction, we also controlled for average level of pay in predicting job satisfaction.

### Results

Descriptive statistics for and intercorrelations among the study variables are provided in Table 1. Because the Level-1 variables were aggregated over the 21 time periods, in considering the correlations in Table 1, it is important to keep in mind that they do not accurately estimate the Level-1 (within-individual) correlations among the Level-1 variables, nor do they reveal anything about the effect of the Level-2 variables on Level-1 slopes (e.g., they do not estimate the effect of core self-evaluations on the time–earnings relationship).

The HLM results testing Hypotheses 1 and 2 are provided in Table 2. In HLM analyses where the data are uncentered, as in this case, the intercept represents the starting value (Time 1) of the

Table 1  
Means, Standard Deviations, and Intercorrelations Among Study Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Age (L2)	44.90	2.31	—									
2. Sex (L2)	0.50	0.50	.01	—								
3. Race (L2)	0.69	0.46	.04	.01	—							
4. Average pay (L2)	\$19,009	\$16,606	.02	-.28	.14	—						
5. Core self-evaluations (L2)	3.20	0.38	.15	-.02	.14	.26	—					
6. Job satisfaction (L1)	3.25	0.42	-.03	.05	.08	.19	.12	—				
7. Pay (L1)	\$19,879	\$16,242	.05	-.30	.14	1.00	.28	.17	—			
8. Occupational status (L1)	35.17	16.06	.09	.24	.11	.39	.37	.20	.39	—		
9. Educational attainment (L1)	12.33	2.64	.14	.04	.06	.30	.35	.08	.32	.50	—	
10. Health problems (L1)	0.03	0.06	.00	.09	-.07	-.16	-.16	-.02	-.18	-.10	-.09	—

Note. Level-1 (L1) variables were averaged over all 21 time periods to create aggregate-level variables (and thus do not accurately estimate true L1 relationships among L1 variables, or interactive effects of Level-2 [L2] variables on L1 slopes). Sex was coded 1 = female, 0 = male. Race was coded 1 = White, 0 = other ethnicities.

dependent variable. In support of Hypothesis (H) 1 (H1a, H1b, H1c), core self-evaluations significantly predicted the intercept for all three career success outcomes, meaning that individuals with high core self-evaluations had higher levels of occupational status (H1c), pay (H1b), and early career job satisfaction (H1a) compared with those with low core self-evaluations. Of the control variables, age positively predicted the intercept of occupational status, meaning older individuals occupied more prestigious occupations. Age negatively predicted the intercept of job satisfaction, meaning that (controlling for pay) older individuals had lower levels of job satisfaction. Sex positively predicted the intercepts of job satisfaction and occupational status, meaning that women had higher levels of job satisfaction and occupied jobs in more prestigious occupations. Sex negatively predicted the intercept of pay, meaning that women, despite occupying jobs in more prestigious occupations, nevertheless earned less than men. Race significantly predicted all three intercepts, meaning that Whites had higher levels of job satisfaction, earned more, and occupied jobs in more prestigious occupations. Finally, as expected, average level of pay positively predicted the job satisfaction intercept, meaning that highly paid individuals were more satisfied with their jobs.

Results in Table 2 also supported H2. Specifically, supporting H2c, core self-evaluations positively and significantly predicted

the slope of time on occupational status, meaning that individuals with high rather than low core self-evaluations gained occupational prestige more rapidly. Supporting H2b, results show that core self-evaluations positively and significantly predicted the slope of time on pay, meaning that pay increased more quickly over time for individuals with high than with low core self-evaluations. The results also support H2a in that core self-evaluations positively and significantly predicted the slope of time on job satisfaction such that the job satisfaction of individuals with high core self-evaluations increased to a greater degree over time than did those with low core self-evaluations.

To show the practical nature of the effects, the HLM results were graphed. The results for job satisfaction, pay, and occupational status appear in Figures 1–3, respectively. As Figure 1 shows, at Time 1 (1979), the difference in job satisfaction between individuals with high and low ( $\pm 1$  standard deviation) core self-evaluations was .06, but by 2004 that difference had tripled to .18. Similarly, for pay (see Figure 2), the initial earnings advantage of individuals with high core self-evaluations was \$3,496, but that advantage nearly tripled, to \$12,821, by 2004. Finally, the results in Figure 3 show that the initial advantage in occupational prestige for individuals one standard deviation above the mean on core self-evaluations nearly doubled over the course of the study—the

Table 2  
Core Self-Evaluations as Predictor of Growth in Job Satisfaction, Pay (Income From Wages/Salary), and Occupational Status

Parameter	Job satisfaction			Pay (\$)			Occupational status		
	<i>B</i>	<i>SE</i>	<i>t</i> ratio	<i>B</i>	<i>SE</i>	<i>t</i> ratio	<i>B</i>	<i>SE</i>	<i>t</i> ratio
Intercept (B0)									
Intercept, B00	3.127	0.071	44.16**	-19,581.23	2,758.17	-7.10**	26.640	0.163	163.75**
Age, B01	-0.008	0.002	-5.16**	89.44	57.81	1.55	0.476	0.055	8.61**
Sex (female = 1, male = 0), B02	0.080	0.007	10.79**	-10,061.40	262.19	-38.38**	7.897	0.253	31.25**
Race (White = 1, other = 0), B03	0.048	0.008	6.20**	3,839.89	255.94	15.00**	3.097	0.272	11.37**
Average pay level, B04	0.001	0.000	16.65**						
Core self-evaluations, B05	0.104	0.010	9.95**	11,948.99	369.70	32.32**	12.452	0.462	26.93**
Slope of time on outcome (B1)									
Intercept, B10	-0.004	0.004	-1.08	-4,394.58	197.37	-22.27**	0.963	0.014	69.63**
Core self-evaluations, B11	0.006	0.001	4.60**	1,890.33	66.21	28.55**	0.451	0.039	11.46**

Note. Time is defined by the year the within-individual variables were measured, ranging from 1 = 1979 to 21 = 2004.  
\*  $p < .05$ . \*\*  $p < .01$ .



Figure 1. Changes in job satisfaction over time as a function of core self-evaluations (CSEs).

advantage in occupational status for high core self-evaluations people grew from 12.9 points at the beginning of the study to 22.12 points 25 years later. Translated into actual job titles, that means the occupational status advantage to high core self-evaluation individuals went from sheriff (34) versus upholsterer (21) in 1979 to podiatrist (58) versus farm manager (36) by 2004.

*Mediating Role of Education and Health Interfering With Work*

In order to determine whether, as hypothesized, changes in education (H3) or health problems (H4) partly explained the hypothesized effect of core self-evaluations on occupational status, job satisfaction, and pay, we adapted Baron and Kenny's (1986) four-step regression approach (see also Kenny, 2006; Kenny, Kashy, & Bolger, 1998) to suit the multilevel nature of the study. With the example of pay and education, one would need to show (a) core self-evaluations predicted growth in pay (predicted the slope of time in predicting pay); (b) core self-evaluations predicted

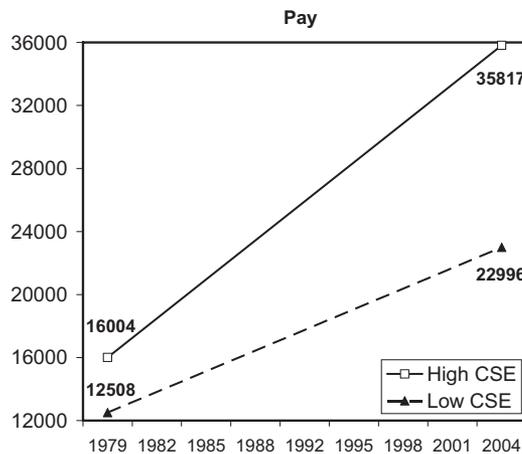


Figure 2. Changes in pay over time as a function of core self-evaluations (CSEs).

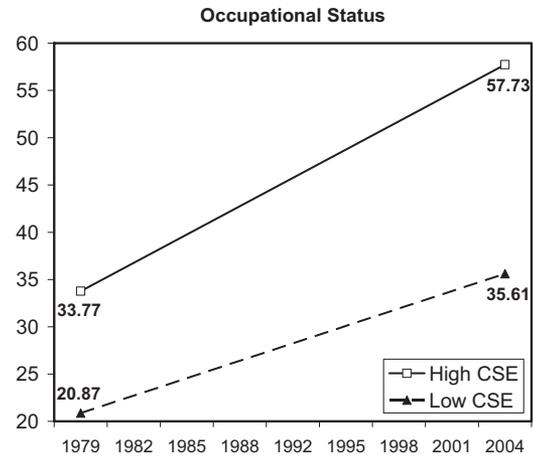


Figure 3. Changes in occupational status over time as a function of core self-evaluations (CSEs).

growth in education (predicted the slope of time in predicting education); (c) within-individual growth in education predicted within-individual growth in pay; and (d) the effect of core self-evaluations on growth in pay decreased once growth in education was controlled (the mediation "effect" can be defined as the relative decrease in the coefficient on core self-evaluations from Step 1).

Step 1, revealing that core self-evaluations predicted changes in the outcomes over time (i.e., the slope of time on the outcomes), was previously demonstrated (see Table 2). The results of Step 2 are shown in Table 3, which reveal that at Level 2, core self-evaluations positively predicted the Level-1 slope of time in predicting education and negatively predicted the Level-1 slope of time in predicting health interfering with work, meaning that those scoring high on core self-evaluations experienced significantly higher increases in education and significantly lower increases in health problems over the course of the study. Graphically, these effects are provided in Figures 4 and 5, which show that educational attainment increased more rapidly for individuals with high scores on core self-evaluations (Figure 4), and the degree to which health problems interfered with work (Figure 5) increased only for those low in core self-evaluations. The effect was particularly noteworthy for health problems interfering with work—for those high in core self-evaluations, health problems declined slightly over time. However, for those low in core self-evaluations, reported health problems nearly tripled.

Step 3, requiring that growth in education was associated with growth in the outcome variables, also was substantiated. Specifically, when entered as a Level-1 variable, within-individual changes in education and health problems interfering with work were positively and significantly associated with changes in occupational status ( $B_{10} = 1.73, t = 7.19, p < .01; B_{20} = 0.90, t = 2.87, p < .01$ ), pay ( $B_{10} = \$1,655.85, t = 7.89, p < .01; B_{20} = -\$2,174.04, t = -8.91, p < .01$ ), and job satisfaction ( $B_{10} = 0.015, t = 8.87, p < .01; B_{20} = -0.040, t = -3.21, p < .01$ ).

For the fourth step, there are several ways in which mediation can be ascertained. One can test the significance of the mediation effect by using the Sobel (1982) test, as recommended by Mac-

Table 3  
Effect of Core Self-Evaluations on Educational Attainment and Health Problems Interfering With Work

Parameter	Educational attainment			Health problems interfering with work		
	<i>B</i>	<i>SE</i>	<i>t</i> ratio	<i>B</i>	<i>SE</i>	<i>t</i> ratio
Intercept (B0)						
Intercept, B00	12.339	0.022	566.15**	0.028	0.001	48.64**
Age, B01	0.096	0.010	9.87**	0.001	0.000	3.16**
Sex, B02	0.231	0.044	5.29**	0.011	0.001	9.73**
Race, B03	0.035	0.049	0.72	-0.008	0.001	-5.94**
Core self-evaluations, B04	2.350	0.072	32.65**	-0.026	0.002	-15.39**
Slope of time on education (B1)						
Intercept, B10	0.089	0.002	51.13**	0.001	0.000	13.84**
Core self-evaluations, B11	0.035	0.007	5.06**	-0.003	0.000	-11.44**

Note. Time is defined by the year the within-individual variables were measured, ranging from 1 = 1979 to 21 = 2004. Sex was coded as female = 1, male = 0. Race was coded as White = 1, other ethnicities = 0.  
\*  $p < .05$ . \*\*  $p < .01$ .

Kinnon, Lockwood, Hoffman, West, and Sheets (2002). The Sobel test compares the standard errors of the independent variable in predicting the purported mediator and of the independent variable in predicting the outcome variable in the presence of the purported mediator. We used the test developed by Preacher and Hayes (2004), utilizing Preacher and Leonardelli's (2006) online program. For education, in the case of job satisfaction ( $t = 7.69, p < .01$ ), pay ( $t = 7.01, p < .01$ ), and occupational status ( $t = 6.56, p < .01$ ), the test statistics were significant, supporting this last link in the mediation process (indicating that education mediates the effect of time on the outcomes). For health problems, significant mediating effects were observed for job satisfaction ( $t = -4.60, p < .01$ ) and pay ( $t = -11.76, p < .01$ ). However, for occupational status, the Sobel test statistic was not significant ( $t = -0.35, ns$ ). Thus, H3 was supported in that educational attainment mediated a significant part of the effect of core self-evaluations on growth in job satisfaction (supporting H3a), pay (supporting H3b), and occupational status (supporting H3c). H4 was partially supported in that health problems mediated a significant portion of the

effect of core self-evaluations on job satisfaction and pay (supporting H4a and H4b, respectively), but not occupational status (not supporting H4c).

#### Testing an Alternative Explanation

One concern with the analyses is that some items that composed the core self-evaluations measure were assessed during the span of the within-individual observations (1979–2004). Two of the core self-evaluations items were measured in 1979, five in 1980, two in 1987, and three in 1992. It is theoretically possible, then, that salary growth increased scores on some of the core self-evaluations items, thus artificially inflating the putative effect of core self-evaluations on career trajectories. We investigated this possibility through several different methods.

One means of testing this possibility is to restrict the analyses to within-individual relationships that did not temporally overlap with any core self-evaluations item. Accordingly, in these alternative analyses, we limited multilevel analyses of the within-

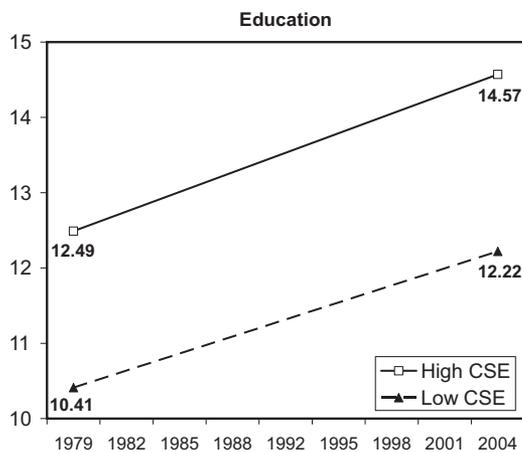


Figure 4. Changes in education over time as a function of core self-evaluations (CSEs).

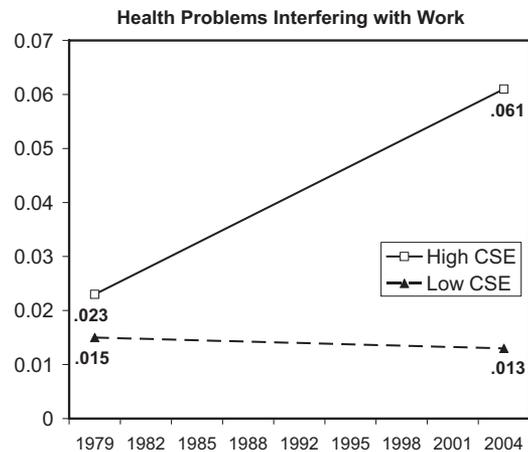


Figure 5. Changes in health problems interfering with work over time as a function of core self-evaluations (CSEs).

individual data to post-1992 observations (1994–2004), ensuring that all within-individual data were measured after the most recent core self-evaluations items were assessed (1992). When this was done, the significance of the Level-2 core self-evaluations coefficient did not change in any analysis. Moreover, the coefficient estimates changed very slightly. Indeed, in some cases, the coefficient estimates *increased* slightly. Such analyses come at a price in that they discard two-thirds (14/21) of the data points for each individual. However, that they did not change any of the relationships increases confidence in the assumed theoretical meaning of the results.

Another means of investigating this possibility is to test whether core self-evaluations better predicted pay growth from 1979 to 1992 (the interval over which the core self-evaluations items were drawn) than pay growth after 1992. Accordingly, we computed a Level-1 indicator (dummy) variable that was coded 1 if the outcome variable occurred in 1992 or before and 0 if the outcome variable occurred after 1992. If core self-evaluations significantly and positively predicted this slope, it would suggest that the relationship between core self-evaluations and pay growth was stronger before 1992 than after 1992. The coefficient was not significant ( $B_{21} = \$390.02$ ,  $t = 0.59$ ,  $p = .55$ , *ns*), indicating that core self-evaluations predicted growth trajectories equally well during and after the core items were assessed.

### Discussion

It is hardly difficult to find exhortations in the business and popular press that, to have a successful career, you simply need to believe in yourself. One career website opines that self-confidence is “the one trait that is fundamental and critical for long term success” (Micek, 2006). Such simplistic advice, of course, has garnered its share of criticism (Baumeister, Campbell, Krueger, & Vohs, 2005), and there are those who believe that the benefits of a positive self-concept are more illusory than real (Baumeister, Campbell, Krueger, & Vohs, 2003; Crocker & Park, 2004). Yet, while many of the appeals to the power of positive thinking are naïve and formulaic, the premise does seem to contain at least a kernel of truth. People with high core self-evaluations tend to be better performers (Judge et al., 2002), are more satisfied in their work (Rode, 2004), are better able to recover from job loss (Wanberg, Glomb, Song, & Sorenson, 2005), and are happier in life (Judge et al., 2003).

Providing further support for the importance of positivity, the findings of this article provide evidence that self-positive individuals are the beneficiaries of a trend toward cumulative advantage in their careers. They tend to begin on a better footing and enjoy steeper career growth over time so that, in this study, the early advantages they established essentially doubled over a 25-year period (i.e., the difference in career success between those  $\pm 1$  standard deviation in core self-evaluations roughly doubled from 1979 to 2004). This is exactly the pattern that would be anticipated based on Merton’s (1968) discussion of the Matthew Effect and the role of self-concept. Moreover, it appears that at least some of the differences in growth rates were due to the effects of core self-evaluations on changes in educational attainment and health. People with negative core self-evaluations acquired education more slowly, which affected growth in pay, occupational status, and job satisfaction. They also experienced a steep rise in health

problems that interfered with work, compromising growth in pay and job satisfaction.

### Limitations and Future Research

The timing of the measurement of core self-evaluations, along with our supplementary analyses, should help to alleviate doubts about causal order between core self-evaluations and career outcomes. Moreover, core self-evaluations are considered to be a trait and, indeed, genetic evidence exists for the heritability of the core traits (e.g., Neiss, Sedikides, & Stevenson, 2002). Nevertheless, global evaluations of self-worth are not perfectly stable (Trzesniewski, Donnellan, & Robins, 2003). As Raudenbush, Brennan, and Barnett (1995) noted, “People and events exist in a context of mutual influence and mutual interaction” (p. 162). Thus, major life and career events likely influence people’s self-evaluations, as would be predicted by symbolic interactionism (Blumer, 1969). Because Hughes (1937, p. 413) defined a career as “a moving perspective,” it would be interesting to determine the degree to which individuals’ definitions of career success evolve over time as well as how such shifting construals might be related to individuals’ self-concepts. We urge future researchers to examine, in a dynamic design, the degree to which life events, career concepts, and self-evaluations may change over time.

Given the nature of the data utilized in this study, an obvious disadvantage is that it was not possible to include other relevant traits, such as conscientiousness and proactive personality. On the criterion side, important criteria such as career satisfaction were unavailable. An ideal investigation would have paired the longitudinal, multilevel design of the study with a comprehensive set of personality and criterion variables. Given the unprecedented nature of the NLSY79, and that it was initiated well before study of the Big Five or proactive personality began, the prospect of an even more comprehensive investigation would seem to be years away. Nevertheless, though the core self-evaluations concept has shown itself relevant even in the presence of the Big Five traits (Johnson, Kristof-Brown, van Vianen, DePater, & Klein, 2004; Judge et al., 2002, 2003), it is quite possible the unique effect of core self-evaluations on career trajectories would be somewhat reduced if other traits were included.

A further limitation is the subjective nature of the single-item Health measure. It is impossible to know from this measure whether individuals were referring to diagnosed health problems or answering based on a general sense of whether their health was an interference. Based on our arguments, core self-evaluations should affect both objective and subjective health. Yet, further research is needed to determine which exerts a greater influence on career trajectories.

Because the mediating effects explored in this study were only partial, there are clearly other factors that might explain why individuals with high core self-evaluations have steeper career trajectories. There is some evidence that self-positive people are better at translating other advantages or accomplishments into success (Judge & Hurst, 2007a). Future research might also examine the extent to which self-verification processes are responsible for the steeper career growth trajectories of self-positive people. As recent research suggests (Schroeder et al., 2006; Wiesenfeld et al., 2007), individuals with low core self-evaluations may not only be more likely to quit when the going gets tough but

may also be prone to leave just when things get good, sabotaging their forward progress.

Merton (1988) and Rosenbaum (1979) noted a troubling aspect to the disproportionate rewards granted the precocious in our society. The systematic tendency to cultivate people who demonstrate high potential early could create self-fulfilling prophecies in which those who eventually rise to great heights do so partly because they are expected to. This might be particularly true of early achievers who also demonstrate high levels of self-confidence. If managers believe that self-confidence is a hallmark of successful people—and there is reason to think that they do (Dunn, Mount, Barrick, & Ones, 1995)—then successes may be implicitly seen as more meaningful for self-positive people because they have the “right stuff” (Stroh, Brett, & Reilly, 1992). A recent study by Judge and Hurst (2007b) suggested this might be the case. It demonstrated that higher levels of academic achievement in young adulthood were related to pay later in life only among those with positive core self-evaluations. The authors believed that self-confident people might capitalize better on their successes. This may be true, but they might also be more richly rewarded than less self-positive people with similar successes. If so, this process diverts resources from those who are also capable of making significant contributions but who are slower to demonstrate this capacity or do not present themselves effectively.

Ultimately, individuals and institutions might suffer from the inordinate value placed on early achievement as the former experience ongoing career deficits and the latter fail to benefit fully from their entire talent pool. This might have some implications for workforce diversity. Cross-cultural research has found that adolescents of different ethnicities and nationalities increased in career maturity at different rates (for a review, see Fouad & Arbona, 1994). Others have found evidence that developing and dealing with the significance of one’s ethnic identity is an additional developmental task for young ethnic minorities, perhaps impacting their early career progress (Arbona, 1995; Thomas & Alderfer, 1989). There are also race and class differences in self-concept (Twenge & Campbell, 2002; Twenge & Crocker, 2002). For instance, Twenge and Crocker’s (2002) meta-analysis found that White Americans’ self-esteem tended to be higher than Hispanic Americans’ self-esteem, particularly at the college level. Our findings suggest that these factors could have real and lasting impacts on people’s careers.

Whether the Matthew Effect on career growth and the role of core self-evaluations in creating that pattern generalize across cultures is another important question. People in other cultures might be less convinced of the signaling value of early achievement. For a number of reasons, positive self-concept might also yield fewer rewards in other cultures. Perhaps careers are less replete with the types of “weak” situations that Ng et al. (2005) argued open the door for personality traits to exert a significant influence. As such, structural factors in other cultures might moderate the effects of self-concept. Core self-evaluations could be less influential in collectivistic cultures, where behavior is more constrained by relational considerations and where the indices of performance and potential differ. For example, Hui and Graen (1997) suggested that promotion in Chinese firms is based heavily on loyalty. One may see different patterns even in societies considered similar to the United States. Law (1993) argued that

self-concept plays a weaker role in career choice in Britain because of thicker barriers there to class mobility.

Finally, it is also worth noting that more of the variance in the career outcomes examined in this study was within-individual than between-individual. This underlines the importance of further study of career trajectories. Savickas (2002) argued that, because processes of development are implicit in the definition of a career, longitudinal study is critical. Ample attention has been directed to between-individual career outcomes. This study suggests that researchers should also focus their lens on factors that influence the dynamics of individuals’ career development across time.

### Conclusion

The present study established that the Matthew Effect is prevalent across the career spectrum. It is also the first to apply personality to understanding this pattern of cumulative advantage, supporting Merton’s (1968) assertion that self-assurance plays a role in establishing and perpetuating the effect. It has been shown elsewhere that individuals with high core self-evaluations enjoy higher job satisfaction (Judge et al., 2000). This study demonstrates that differences in both intrinsic and extrinsic success are established early and, rather than regressing toward the mean, high core self-evaluations individuals extend these advantages. Over time, their career success increases at a greater pace than that of individuals with below average core self-evaluations. In the end, over a 25-year career span, those with above average core self-evaluations have roughly twice the advantage they enjoyed to begin. Education and health problems play a role in that those with high core self-evaluations acquire the former more quickly and the latter less quickly, and both affect career growth. So, although aging has been called the “great equalizer,” it appears that time is more on the side of those with high core self-evaluations where careers are concerned.

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## Appendix

## NLSY79 Items Used to Measure Core Self-Evaluations

1. I have little control over the things that happen to me. (1979; reverse-scored)
2. There is little I can do to change many of the important things in my life. (1979; reverse-scored)
3. I feel that I am a person of worth, on an equal basis with others. (1980)
4. I feel that I have a number of good qualities. (1980)
5. All in all, I am inclined to feel that I am a failure. (1980; reverse-scored)
6. I feel I do not have much to be proud of. (1980; reverse-scored)
7. I wish I could have more respect for myself. (1980; reverse-scored)
8. I've been depressed. (1987; reverse-scored)
9. I've felt hopeful about the future. (1987)
10. What happens to me in the future mostly depends on me. (1992)
11. What happens to me is of my own doing. (1992)
12. When I make plans, I am almost certain to make them work. (1992)

*Note.* Year in which item was measured in the NLSY79 is in parentheses.

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