

Self-Esteem and Extrinsic Career Success: Test of a Dynamic Model

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It has been proposed that one's self-esteem is both a cause and a consequence of one's extrinsic career success, but empirical research examining the direction of these effects is lacking. We tested a model which examines the relationships among self-esteem, education, occupational prestige, and income over a span of seven years during early careers. We use social identity theory to propose that self-esteem will be affected by extrinsic career success, and self-consistency theory to propose that extrinsic career success will be affected by self-esteem. Our results, based on a cross-lagged regression design, suggest that self-esteem increases occupational prestige ($\beta = .22$), and income ($\beta = .22$), but career outcomes did not alter self-esteem. Implications of these results for the study of self-esteem and careers are explored.

Que l'estime de soi d'une personne soit à la fois une cause et une conséquence de son succès externe en termes de carrière est établi, mais les recherches empiriques examinant la direction de ces effets manquent. Nous testons un modèle examinant les relations entre l'estime de soi, l'éducation, le prestige professionnel et le revenu sur une durée de 7 ans à partir du début de carrière. Nous nous référons à la théorie de l'identité sociale pour montrer que l'estime de soi est affectée par un succès externe intervenant dans la carrière, et la théorie de consistance de soi pour montrer que ce succès externe est affecté par l'estime de soi. Nos résultats, basés sur une analyse de régression croisée, montrent que l'estime de soi accroît le prestige professionnel ($b = .22$) et les revenus ($b = .22$), mais les résultats relatifs à la carrière n'affectent pas l'estime de soi. Les implications de ces résultats pour l'étude de l'estime de soi et de la carrière sont explorées.

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INTRODUCTION

The work role is one of the most central sources of identity in contemporary society. Consider, for example, how the question of “What do you do?” is implicitly translated into “What is your job?” As Hulin (2002) has noted, the number of surnames in English and other languages that denote occupations (e.g. Smith, Cooper, Judge) attests to the centrality of occupations to identity. For most people, a job is “the most important social and economic role held by most adults outside their immediate family or household” (Hauser & Warren, 1997, p. 179). Social identity theory proposes that individuals think categorically about themselves and others, such that members of a high-status group assume themselves to be superior because of this group identification, while members of low-status groups may have an equal and opposite reaction (e.g. Ashforth & Mael, 1989; Hogg & Terry, 2000). Thus, one’s work sends important information to oneself and others about one’s status in society.

Although the potential influence of extrinsic career success on self-image is easy to see, it is also easy to see how self-image may also influence extrinsic career success. Theory and research on self-consistency suggest that people are prone to seek out roles consistent with their self-appraisals (Korman, 1976; Tesser, 1988). Thus, people with high self-esteem, for example, will try to adopt work roles consistent with their positive images of themselves, especially attempting to take on jobs that are perceived as being challenging, rewarding, and which society perceives as “high status” (Gottfredson, 1981; Super, 1980). Positive self-esteem may therefore create a self-fulfilling prophecy (I see myself as a valuable person, and therefore I will be a valuable employee as well) that will be demonstrated in career achievement (Chen & Klimoski, 2003; McNatt & Judge, 2004). Conversely, people with a negative self-image may end up in low-status jobs due to their negative perceptions of their own worth, and their desire to verify their poor self-concept.

The preceding discussion highlights a critical question—do people derive their sense of self-worth from the careers they have achieved, or do people with a positive sense of self-worth achieve more in their careers? Individual differences in personality traits from the Five Factor model measured in childhood are related to career outcomes much later in life, which supports the idea that personal dispositions can influence career outcomes (e.g. Judge, Higgins, Thoresen, & Barrick, 1999). Many of the important questions in the literature on self-esteem, social status, and identity have reciprocal relationships at their core and therefore require repeated measures of self-image and careers over time (Elliott, 1996; Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). Although there is considerable evidence of stability in self-esteem (Trzesniewski, Donnellan, & Robins, 2003), there also is evidence that it is amenable to manipulation in laboratory

settings (e.g. Brockner, 1988). Mortimer, Finch, and Kumka (1982) noted that the self-concept generally appears to be stable over time, but there are key periods of disturbance where changes in self-image can be profitably examined. In particular, there are substantial changes in self-esteem especially around the period of transition from school into work when occupational identities are being formed (Demo, 1992).

There is, of course, an existing literature on self-esteem and careers. Unfortunately, this research does not address the proposition from identity theory that self-esteem and career success can influence one another (Ervin & Stryker, 2001). Most prior research has used measurements of extrinsic career success and self-esteem that were collected contemporaneously (for a review of several studies along these lines, see Sullivan, 1999). Studies have used this cross-sectional evidence to proclaim the effects of success-related variables (e.g. abilities, educational attainment, income, job control, occupational prestige) on self-image (Bernick, 1981; Gecas & Seff, 1990; Pelham, 1995; Weidman, Phelan, & Sullivan, 1972). Without repeated measures over time, it is impossible to assess which variable is causing which. The only study in this area that has involved repeated measures of self-esteem used a 10-year panel study of 435 male college graduates who began their work histories in the late 1960s (Mortimer & Lorence, 1979). This study found that there was no significant relationship between income and changes in self-esteem. The present study adds to this literature by considering both males and females, addressing occupational status, and including reciprocal effects across time. Reviewers have made explicit calls for research studying how self-esteem changes with increased occupational experience (Demo, 1992), but to date, few have taken up this challenge.

Besides answering ongoing questions in the self-esteem literature relating self-esteem to career status, we believe there are reasons why the careers literature will benefit from a better understanding of this reciprocal relationship. First, the research on careers has started to examine some of the reciprocal influences between subjective career success (which incorporates self-esteem) and objective career success, but there remains a great deal of causal ambiguity regarding the direction of influence (e.g. Arthur, Khapova, & Wilderom, 2005; Hall & Chandler, 2005). Second, Super's (1980) examination of career stages and adult development proposed that an individual's self-concept is shaped by occupational choice and career progress. Consistent with Super's (1980) proposition, we hypothesise that career success will have a direct effect on self-esteem. For the present investigation, we take account of extrinsic career success as a construct that includes the income level of the job as well as the prestige of one's occupation. The inclusion of occupational prestige means that we are using a broader definition of career success than found in some other recent investigations (e.g. Ng, Eby, Sorensen, & Feldman, 2005), but because our focus is on the

self-esteem construct as it relates to extrinsic career success, we felt it was crucial to include a measure of the social esteem awarded to one's profession.

There are two primary theoretical bases for the present study. The relationship from extrinsic career success to self-esteem is based on social identity theory (e.g. Hogg & Terry, 2000; Tajfel, 1972), which proposes that highly salient group membership (e.g. occupation) often leads individuals to engage in a derivation of self-worth based on the social status of their group. The relationship from self-esteem to extrinsic career success, on the other hand, is based on self-consistency (Korman, 1976; Tesser, 1988), which proposes that individuals seek to enact behavior that corresponds to their self-esteem. We test a model intended to separate the reciprocal effects of self-esteem, education, occupational prestige, and income using repeated measures of all these concepts. This enables us to explore a compelling but as yet unanswered question: what is the causal nature of the relationship between self-esteem and extrinsic career success (as measured by occupational prestige and income)? In the next section of the manuscript, we define the central concepts, and discuss models relating self-esteem to education, occupational prestige, and income.

MODEL OF THE RELATIONSHIPS AMONG SELF-ESTEEM, EDUCATION, OCCUPATIONAL PRESTIGE, AND INCOME

Figure 1 depicts the reciprocal causal relationships among the core constructs considered in our study. An important note for all of these relationships is

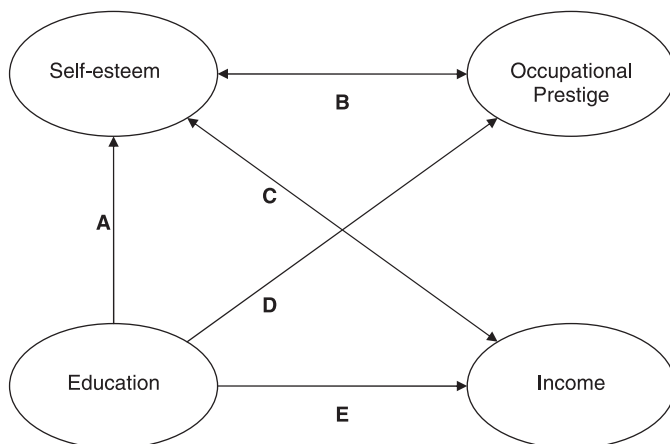


FIGURE 1. Conceptual relationships among self-esteem, education, income, and prestige.

that we are focusing our attention on *changes* in self-esteem, education, occupational prestige, and income rather than simply noting zero-order relationships. Although it is not a feature of extrinsic career success, education is included prominently in our model because, as we will show, it is likely a source of self-esteem, income, and occupational prestige. Below we describe the nature of these relationships. Although our primary theoretical perspectives are from social identity theory and self-consistency theory, we also draw from the primary literatures on careers, education, social status, and self-esteem to support our arguments.

Relationship A: Education and Self-esteem

As noted by Meyer (1977), the educational system confers status on those who perform successfully within its rules. Meyer proposes that, “Students tend to adopt personal and social qualities appropriate to the positions to which their schools are chartered to assign them” (p. 60). The importance of education as a measure of worth in the world of work, such as minimal requirements for hiring in many jobs, makes education a likely area from which individuals might draw their self-esteem. This is supported by the contention from social identity theory that salient signals of achievement are especially likely to lead to social identification (Hogg & Terry, 2000). Although, theoretically, one can envision a bi-directional relationship between self-esteem and education based on self-consistency, Baumeister, Campbell, Krueger, and Vohs (2003), in their review of the empirical literature, flatly concluded, “Global self-esteem is not a cause of school performance” (p. 13). On the other hand, research does tend to support an effect of academic achievement on self-esteem in the more immediate context of grades (Skaalvik & Habtvet, 1990). By extension, because educational achievement is such an important marker of social status, we expect that increases in the number of years of educational attainment will affect self-esteem, but not the converse. Our longitudinal study is more able to address the cumulative effects of educational achievement on self-esteem over years compared to the previous research that has dealt primarily with much shorter periods of time.

Hypothesis 1: Educational attainment will be associated with increases in subsequent self-esteem.

Relationship B: Self-esteem and Occupational Prestige

The potential for a link between self-esteem and occupational prestige has long been recognised. Parsons’ (1940) functional role theory presented an early iteration of social identity theory. He posited that a person’s

self-regard reflects the degree to which that person lives up to the norms and expectations of his or her culture. By extension, since extrinsic career success is central in contemporary society, Parsons further noted that people who obtain highly desirable positions are likely to experience increases in their self-regard. This idea is supported by Hogg and Terry (2000), who noted, "For many people, their professional and/or organizational identity may be more pervasive and important than ascribed identities based on gender, age, ethnicity, race, or nationality" (p. 121). Working from the other direction, self-consistency theory (Korman, 1970) proposes that people work toward achieving roles that are congruent with their self-image. By extension, those with high self-esteem will be especially attracted to high-status occupations. By combining these perspectives, it is anticipated that there is a positive relationship between self-esteem and the prestige of one's job, with self-esteem increasing prestige and prestige increasing self-esteem in turn.

Hypothesis 2: Self-esteem will be associated with increases in subsequent occupational prestige, and occupational prestige will be associated with increases in subsequent self-esteem.

Relationship C: Self-esteem and Income

In a society like the United States, which places comparatively little emphasis on status conferred by birth to a prominent family or aristocratic upbringing, an individual's own wealth is a marker of achievement (Parsons, 1940). Observable markers of success like income can be used to form a social identity (see Demo, 1992). For example, self-consistency theory suggests that individuals will seek out clear indications of their occupational success, and those who have high levels of income will perceive income as an important indication of their self-worth (Gecas & Seff, 1990). The same conclusion was reached by Rosenberg and Pearlin (1978) who noted that because economic achievement was an indicator of status in society, higher levels of economic achievement should lead to higher self-esteem. Working from the other direction, positive self-evaluations are positively related to motivation and performance (e.g. Arnolds & Boshoff, 2002; Erez & Judge, 2001). Because there is an expectation that individuals with more positive work behaviors will be compensated for their superior performance (e.g. Judge, Higgins, et al., 1999), it is expected that income will follow. In a manner similar to the relationship between self-esteem and prestige, we predict that self-esteem is both a cause and effect of income.

Hypothesis 3: Self-esteem will be associated with increases in subsequent income, and income will be associated with increases in subsequent self-esteem.

Relationship D: Education and Prestige as a Control

The education system has been conceptualised as one of the primary status allocation devices in contemporary society, with high minimum education requirements being a specific prerequisite for many of the most prestigious occupations such as doctors, lawyers, scientists, and professors (Meyer, 1977). Furthermore, both level of education and the quality of one's education send particularistic signals (Merton, 1968) to the labor market, such that individuals with the "right stuff" are funneled into prestigious occupations (Doeringer & Piore, 1971). Empirical evidence at the occupational level shows a strong relationship between occupational prestige and educational requirements (e.g. Jasso, 2001). As such, our model statistically accounts for the potential relationship between education and occupational prestige by including education levels as predictors of occupational status in the full model.

Relationship E: Education and Income as a Control

Because degrees are the minimum entrance requirement for many high paying jobs in the same way that they are the minimum requirement for high prestige jobs, it is likely that individuals with higher levels of education will earn more (Meyer, 1977). A great deal of evidence from labor economics indicates that higher levels of education are associated with income, even when general mental ability levels are held statistically constant (e.g. Blackburn & Neumark, 1993; Cawley, Conneely, Heckman, & Vytlačil, 1997). As with prestige, we believe that our analysis should include a specific estimate of the potential education-income relationship over time as well to prevent a spurious relationship between self-esteem and these variables.

Besides controlling for dynamic covariates, we also address the importance of several fixed covariates. First, demographic variables such as age, gender, and race have frequently been included in research related to educational opportunity, social prestige, income, and self-esteem (e.g. Bernick, 1981; Elliott, 1996; Gecas & Seff, 1990; Mortimer & Lorence, 1979). Additionally, general mental ability has been shown to be related to years of education and job performance, and has been suggested as a possible cause of a positive self-image, and as such should also be held constant (Gottfredson, 1986; O'Reilly & Chatman, 1994).

METHOD

Data

The data in the study were obtained from the *National Longitudinal Survey of Youth 1979* (NLSY79), conducted by the Center of Human Resources

Research at the Ohio State University. The NLSY79 is a nationally representative probability sample of 12,686 individuals who were between the ages of 14 and 21 in 1979. Each participant has been interviewed since 1979 to assess labor force experiences, labor market attachment, and investments in education and training. Only those participants who provided complete information on the study's variables in both 1980 and 1987 were included in the study. The sample was also limited to those who were at least 18 years of age at the time of the first survey. The sample was further restricted to those working full-time (at least 30 hours per week) in 1987. As a result of these restrictions, we had 1,765 individuals with usable data in our sample.

Measures

Self-esteem. Seven items from the 10-item scale developed by Rosenberg (1965) were used to assess self-esteem. Participants indicated on a 4-point Likert scale (1 = *strongly disagree*, 4 = *strongly agree*) the extent to which they agree with statements such as, "I am a person of worth" and "I wish I had more self-respect" (reverse coded). The coefficient alpha estimate of reliability for the self-esteem scale was $\alpha = .80$ and $\alpha = .87$ in 1980 and 1987, respectively.

Education. Level of education was measured with a variable representing the total number of years of formal education completed by participants. For example, participants who graduated from high school had 12 years of education, those who completed a four-year college degree had 16 years of education, and so forth. We used estimates of education in 1980 as part of our instrumental variables analyses.

Occupational Prestige. The Duncan Socioeconomic Index (SEI) was used to measure job complexity and occupational prestige (Duncan, 1981). The Duncan index is a measure of occupational prestige taken from a number of experts in the 1950s from Census data on occupational characteristics and on the perceptions of the prestige rating of occupations (Hauser & Warren, 1997; Wilk & Sackett, 1996). There is strong consensus in occupational prestige ratings over time and in a variety of industrialised nations (e.g. Hauser & Warren, 1997; Wegener, 1992). Scores range from 1 to 100, with garbage collectors in the 1 to 10 range, real-estate agents in the 60 to 70 range, and doctors and lawyers falling into the 90 to 100 range.

Income. Each participant was asked to identify, in US dollars, the amount of money received from income, salaries, commissions, and tips before deductions. The natural log of income was used as a dependent variable, to reduce heteroskedasticity as in traditional wage studies (Johnston &

DiNardo, 1997). Income was divided by hours worked per week to give average hourly income.

Control Variables. From the NLSY database, we obtained each participant's age, gender (1 = *female*, 0 = *male*), race (0 = *non-White*, 1 = *White*), and number of hours worked in an average week. To measure general mental ability, participants completed the Armed Services Vocational Aptitude Battery (ASVAB) in 1980. The first factor that emerged from a principal components analysis was used as a signifier of general mental ability, as in previous studies (e.g. Wilk & Sackett, 1996).

ANALYSIS

A central problem for the current study is determining directionality of relationships we observe. One method for disentangling potentially non-recursive (i.e. reciprocal) relationships is to look for *change* in a dependent variable following a change in a predictor. Taking income and self-esteem as an example, it is impossible to assess whether income increases self-esteem by looking at a simple correlation between self-esteem and income. It is possible that those high in self-esteem will take high income jobs due to their efforts, or the social acknowledgement of performance in the form of high income leads people to increase their perceptions of self-worth. On the other hand, the change in self-esteem immediately following a raise in income is a clearer demonstration that income can increase self-esteem. Autoregressive models are designed to disentangle such non-recursive influences (Edwards & Parry, 1993). In these models, post-raise self-esteem would be predicted by both the raise and pre-raise self-esteem. This holds the original level of self-esteem constant, making the coefficient for the raise an estimate of the raise on changes in self-esteem. Autoregressive models have been used previously to determine the impact of community relocation on self-esteem (King, Ryff, Love, & Essex, 2003) and the effects of finding a job and getting married on self-esteem (Elliott, 1996).

The second component of our empirical modeling strategy is the use of instrumental variables estimation (IVE) regression. As Foster and McLanahan (1996) described, ordinary least squares regression relies on the assumption that no reciprocal direct effects exist between independent and dependent variables. For example, if 1987 income is used to predict the change in self-esteem from 1980 to 1987, at least part of the value of 1987 income will reflect the impact of self-esteem on income in the period from 1981 to 1986. This tendency for unmeasured influences to affect independent and dependent variables over time is endogeneity, which means that parameters from a regression of income in 1987 on self-esteem from 1987, and vice versa, will

be biased even if income in 1980 is held statistically constant (Davidson & MacKinnon, 1993). Because prestige, income, and self-esteem are particularly likely to fluctuate throughout one's career in response to one another, an approach is needed that removes this endogeneity.

To estimate models involving potential mutual causality, an estimate of the predictor at the current time that is as accurate as possible, but which *cannot* be caused by the outcome, is required. While using Time 1 values of prestige as predictors of income at Time 2 (holding Time 1 income constant) is an appealing strategy that avoids endogeneity (e.g. Judge, Thoresen, Pucik, & Welbourne, 1999), IVE goes a step further by allowing the researcher to look at the effects of *current* prestige as a predictor of *current* income. The advantage of using this instrumental variable beyond using the 1980 estimate of self-esteem is that the instrumental variable captures a variety of influences that might be reasonably expected to predict growth in self-esteem over time. Parameter estimates in an IVE regression are similar to those of ordinary least squares regression (de Leeuw & Kreft, 1986), but are uncorrelated with disturbance terms, and therefore are consistent and estimated without bias (Hsiao, 1997). Details on the statistical models are provided in the Appendix.

RESULTS

Correlations among the variables are presented in Table 1. The table reveals that self-esteem is substantially related to career outcomes. Of note, there are moderate, statistically significant relations between self-esteem in 1987 and education ($r = .27$), income ($r = .20$), and prestige scores ($r = .25$) from 1987. Similarly, self-esteem in 1980 is significantly related to both income ($r = .08$) and prestige ($r = .18$) from 1980. The observed increases in the correlations between self-esteem and career outcomes over time are consistent with both social identity and self-consistency theories. The magnitude of the correlations, given the fact that these are field data, is also sufficient to justify further exploration. However, these results do not unwrap the causal relationships among the variables.

Regression results using IVE are presented in Table 2. As a summary device, Figure 2 presents the basic model from Figure 1 including only those relationships that were empirically supported. Path A of the theoretical model specifies a one-way relationship from education to self-esteem. However, the regression model in which self-esteem was regressed on education yielded a non-significant coefficient estimate when controlling for age, gender, race, and intelligence. Contrary to expectations, high levels of education in 1987 were not associated with higher levels of self-esteem in 1987 ($\beta = .07$, ns). Thus, Hypothesis 1 was not supported. Although we did not hypothesise self-esteem as an antecedent of educational attainment, we

TABLE 1
Descriptive Statistics and Intercorrelation of Study Variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	20.75	1.21	1.00											
2. Gender (1 = female, 0 = male)	0.33	0.47	0.00	1.00										
3. Race (1 = non-white, 0 = white)	0.77	0.42	0.03	0.05	1.00									
4. General mental ability (ASVAB)	0.00	0.92	0.04	-0.11	-0.46	1.00								
5. Hours worked (1987)	52.06	11.56	-0.02	-0.22	0.01	-0.05	1.00							
6. Self-esteem (1987)	16.59	3.99	-0.05	0.03	-0.03	0.31	-0.01	1.00						
7. Education (1987)	12.36	1.72	0.14	0.17	0.00	0.44	-0.05	0.27	1.00					
8. Income (1987)	19,733	9,287	0.01	-0.30	-0.06	0.36	0.14	0.20	0.25	1.00				
9. Prestige (1987)	39.32	21.23	0.00	0.30	-0.09	0.26	-0.04	0.25	0.37	0.18	1.00			
10. Self-esteem (1980)	16.99	3.95	0.04	0.01	-0.01	0.27	-0.04	0.46	0.23	0.17	0.20	1.00		
11. Income (1980)	9,098	5,287	0.10	-0.19	-0.03	0.14	0.04	0.05	-0.02	0.29	0.06	0.08	1.00	
12. Prestige (1980)	32.14	18.80	0.05	0.35	-0.09	0.24	-0.08	0.16	0.25	0.11	0.44	0.18	0.00	1.00

Note: $N = 729$. Correlations greater than .05 are significant at $p < .05$ (two-tailed tests).

TABLE 2
Instrumental Variables Regression Results

	<i>Prestige</i> (1987)	<i>Income</i> (1987)	<i>Self-esteem</i> (1987)
<i>Controls</i>			
Age	-.03	-.04	-.08*
Gender (0 = male, 1 = female)	.17**	-.16**	-.02
Race (0 = White, 1 = non-White)	-.04	.06	.08
General mental ability	.05	.22**	.21**
Autoregression (1980)	.29**	.23**	.38**
<i>Main predictors</i>			
Education (1987)	.16**	.10*	.07
Self-esteem (1987)	.22**	.22**	
Income (1987)			-.09
Prestige (1987)			-.12
Model R ²	.29**	.21**	.25**

Note: Self-esteem (1987), education (1987), income (1987), and prestige (1987) were instrumented by their 1980 values when included as predictor variables. N = 741.

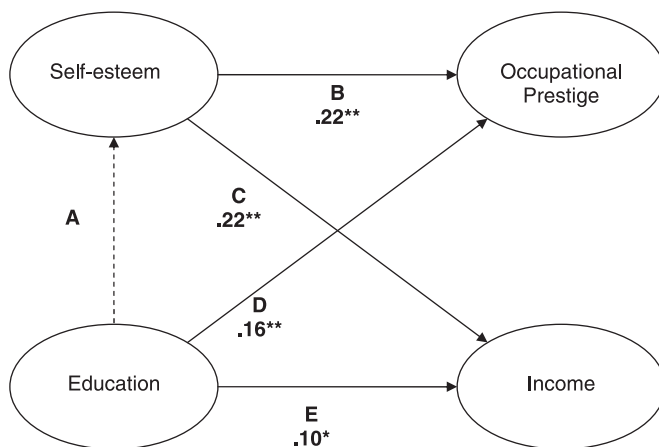


FIGURE 2. Empirically supported relationships among self-esteem, education, income, and prestige.

did investigate this possibility in a post-hoc analysis. The results from a fully specified IVE showed that self-esteem was not a significant predictor of education ($\beta = .05, p = .11$).

The theoretical model in Figure 1 specified a reciprocal relationship between self-esteem and occupational prestige (Path B). In the first set of equations, occupational prestige was regressed on self-esteem in 1987 to

determine if higher levels of self-esteem directly influence occupational prestige. In the second set of equations, self-esteem in 1987 was regressed on occupational prestige to determine if higher levels of occupational prestige directly influenced self-esteem. If both sets of regression coefficients are significant, then the causal direction between the variables is reciprocal, meaning each variable influences the other. However, if one coefficient is significant while the other is non-significant, we can infer causal direction from the independent to the dependent variable in the regression equation that yielded a significant estimate. As results in Table 2 indicate, Hypothesis 2 was partially supported in this regard. Self-esteem had a significant effect on occupational prestige in 1987 ($\beta = .22, p < .05$) after other factors were held constant. The regression of self-esteem on occupational prestige, however, was not significant ($\beta = -.12, ns$). Thus, the results provide support for the existence of a causal relationship from self-esteem to occupational prestige, but not the reverse.

Path C specified a reciprocal relationship between self-esteem and income. As regression results indicate, income in 1987 did not have a significant influence on self-esteem in 1987 ($\beta = -.09, ns$). On the other hand, self-esteem in 1987 was a significant predictor of income in 1987 ($\beta = .22, p < .05$). Thus, Hypothesis 3 was partially supported. The raw regression coefficient for this variable in the full model is $\beta = .11$, which means that (because income data are in log form) for each standard deviation increase in self-esteem, there is a corresponding 11 per cent increase in expected income. Holding all other variables constant and using Manning, Duan, and Rogers' (1987) technique for re-estimating a logged dependent variable in its original scale, the expected annual income for a person with one standard deviation (SD) below the mean self-esteem is \$16,854, for a person with the mean self-esteem is \$18,706, and for a person with one SD above the mean self-esteem is \$20,761.

DISCUSSION

The current study set out to examine the reciprocal relationships between self-esteem and common indicators of extrinsic career success. Whereas several studies have introduced self-esteem into the careers literature as a dependent or independent variable, the present study is the first to investigate potential bi-directional relations with indicators of extrinsic career success. To test the model, we used a combination of cross-lagged regression and IVE, which allowed us to isolate and test possible reciprocal effects among the study's primary variables. In our discussion, we will focus on results for self-esteem as an independent variable, self-esteem as a dependent variable, as well as a consideration of implications of the current study for future studies in this area.

Self-Esteem as an Independent Variable

Based on theoretical propositions and empirical support, we developed a conceptual model of the links among self-esteem, education, occupational prestige, and income that included self-esteem as a cause of status. Consistent with theories which assert that income and occupational prestige can be influenced by self-esteem, our results indicate that individual perceptions of self-worth are significantly related to extrinsic career success-oriented outcomes. The theory of circumscription and compromise is clearly relevant in this case, insofar as it proposes that one's range of acceptable career options will be affected by one's self-perception (Gottfredson, 1981). Our results correspond to this theory by looking at the specific variable of self-esteem as an indicator of part of the self-concept. One recent review of the research evidence proposed that self-esteem is unlikely to be related to as many positive outcomes as previously believed (Baumeister et al., 2003). Contrary to this observation, self-esteem was positively related to income and occupational status even after the most plausible alternative predictors (education and general mental ability) were included in the analysis.

The finding that self-esteem is related to higher income and prestige over time is consistent with a self-verification prediction. In the same way that people gravitate towards job levels that match their abilities (Wilk, Desmarais, & Sackett, 1995), they also appear to gravitate towards jobs that match their self-regard. Previous research has shown that individuals with higher self-esteem engage in more effective job search strategies when beginning their careers (Ellis & Taylor, 1983; Saks & Ashforth, 2000) or after a layoff (Kanfer & Hulin, 1985). The significant relationship between self-esteem and income is consistent with evidence that self-evaluations are positively related to motivation and performance (Erez & Judge, 2001). The present study demonstrates that self-esteem can not only affect job search and short-term performance, but also can have effects over a period of years in one's career.

Self-Esteem as a Dependent Variable

The current study also tested self-esteem as an outcome variable to determine if indicators of extrinsic career success influence perceptions of self-worth. It may be possible for judgments of self-esteem to fluctuate with changes in extrinsic career success. Certainly, it has been shown that people use information from experience when forming specific judgments of self-efficacy for a task (Gist & Mitchell, 1992), and results of the current study suggest that typical work experience has the same sort of influence on global measures of self-esteem. Participants in our study did not appear to derive their self-esteem from the status associated with their work. The fact that self-esteem is not predicted by the indicators of occupational accomplishment

is at least partially inconsistent with social identity theory. Social identity theory does propose that salience moderates the influence of identity on self-esteem, so it is possible that career success would have a significant relationship on self-esteem for individuals who have higher work-role centrality. There may also be temporary effects from career success on self-esteem in specific situations where the salience of career success is high (e.g. at school reunions, when meeting with parents who instilled certain career expectations, etc.). Research does suggest that income is not strongly related to job satisfaction (Heneman & Judge, 2000), so it may also be that income is not as closely related to self-image as predicted. It is also possible that publicly observable measures of one's own personal performance (e.g. recognition, promotions) relative to others in the same profession would have a stronger effect on self-esteem than would compensation or overall occupational status.

The results of our study revealed that self-esteem was relatively stable ($r = .46$) over the 7-year time period of the study. This is similar to other evidence on the stability of self-esteem (Trzesniewski et al., 2003) and, perhaps surprisingly, self-esteem is roughly as stable as other personality traits. At first blush, this would suggest that self-esteem is every bit as much a trait as other personality concepts, such as those within the Five Factor model. However, a couple of caveats need to be issued here. First, correlational (rank-order) stability does not constrain mean-level change, a point that has been made repeatedly by Gerhart (1987, 2005) in organisational behavior, and by Roberts, Caspi, and colleagues (Caspi & Roberts, 2001; Roberts & DelVecchio, 2000) in personality psychology. To be sure, the mean-level change was relatively small in this study ($d = -.10$; see Table 1), though we observed in our data that some people's self-esteem changed to a much larger degree than others, with some individuals experiencing over a full standard deviation increase or decrease in self-esteem. Since we analysed changes in rank order and not mean-level changes, our study does not speak to the efficacy or inefficacy of situations, context, or interventions in terms of mean levels of self-esteem. Second, on the issue of rank-order changes, our results are somewhat equivocal. Surprisingly, education was not associated with changes in self-esteem. However, cognitive ability did predict changes in self-esteem. Because there are numerous pathways through which this might have occurred (smart people better select themselves into rewarding jobs and occupations, smart people fare better in employment contexts and these successes bolster their self-esteem), future research should investigate this relationship in greater detail.

Limitations and Future Research

A limitation of the current study is that no measure of work-role centrality or identity salience was obtained. An increasing number of researchers

propose that the broad agreement on occupational status may be masking a more complex relationship (Wegener, 1992), and self-esteem researchers now place great emphasis on the importance of one's comparison groups (Sedikides & Gregg, 2003). Future research should include both workplace-specific variables indexing relative status as well as individual differences that might affect the subjective importance of these dimensions (Heslin, 2005). Alternatively, research can attempt to uncover the use of justification processes that might be preventing low-status workers from having low-status self-images. It also would be worthwhile to expand the set of extrinsic career success variables studied, including other extrinsic elements such as promotions and status within a profession, as well as intrinsic indicators such as career satisfaction.

Future research should address the question of why occupational status does not appear to affect self-esteem as expected. The job-crafting model suggests that individuals will reframe their images of work if they feel that their work does not support their self-images (Wrzesniewski & Dutton, 2001). It may be that individuals will make their work identity a relatively small part of their self-concept, put comparatively less emphasis on the social status of their jobs, or pay more attention to specific features of their work that they find rewarding like human interaction or intrinsic task motivation. As intuitively appealing as the job-crafting model is as an explanation for our results, there are as yet no empirical studies that we could locate that specifically test these propositions.

One area for future research is the development of models which incorporate more frequent assessments of both self-esteem and extrinsic career success. A more thorough investigation with repeated measures of self-esteem and extrinsic career success might be able to look more closely at the influence of discrete events on self-image. It is conceivable that sudden changes in occupational or educational status (e.g. promotions, pay raises, receiving a degree) might have a more substantial effect on self-image in the short run, or temporary increases in self-esteem could similarly lead to short-run increases in status. After this initial boost, individuals might then return to a self-image baseline as their comparatively more enduring self-image retains its dominance, as has been shown with self-efficacy interventions (McNatt & Judge, 2004).

In addition, the fact that objective, socially sanctioned success in terms of money or prestige is apparently unrelated to increases in self-esteem does not demonstrate that careers are completely unimportant for self-esteem. Subjective aspects of a career, including a personal sense of accomplishment, a belief that a career contributes to the betterment of society, and the sense that a career is a meaningful expression of one's values may be more important to self-esteem (Heslin, 2005). These elements have been collectively described as the sense that a career is a "calling" by Hall and

Chandler (2005). Hall and Chandler also note that subjective career success is the result of setting and achieving challenging goals, which further suggests that to really understand how career progress can influence self-concept, it will be necessary to study the process of goal setting and perceived success at a more individual level. To gain greater insight into these processes, future studies in the area of career success and self-esteem should measure goal clarity, career salience, discrepancies between set goals and achievements, and consider social aspects of the career like recognition by peers, supervisors, and family members.

In conclusion, the current study is one of the first examples of research which includes longitudinal data on both career attainment and self-image. Our results tended to suggest that self-esteem had a substantial effect on career outcomes, but career outcomes did not affect extrinsic career success. Future research should consider other aspects of self-image and identity to determine if there are other personality-related variables that might be influenced by career outcomes, or if the directionality of career success flows entirely from individual differences to career outcomes.

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APPENDIX

To calculate IVE regression, a two-stage process is used. The purpose of the first stage is to create new predictors that do not violate OLS regression assumptions. This is accomplished by creating an estimate of our independent variables using variables that could not possibly be affected by the dependent variable. In the present study, explanatory variables in 1987 were estimated by using reported values of each variable in 1980 along with the other regressors in the model. So, for example, the instrumental variable for self-esteem in 1987 was created by regressing self-esteem 1987 on the predictors of self-esteem in 1980 along with all the other variables in the model (e.g. gender, age) that would also be uncorrelated with the error term. The model for the first stage in the first model we estimated in Table 2, for example, using *SEst* to indicate self-esteem, is:

$$SEst(87)^* = \eta_0 + \eta_1(age) + \eta_2(gender) + \eta_3(race) + \eta_4(ASVAB) \\ + \eta_5(educ(80)) + \eta_6(SEst(80)) + \varepsilon$$

Because all the variables that are used to predict self-esteem in 1987 are based on their 1980 values, it is impossible for these variables to be affected by the endogeneity in the non-recursive model. More specifically, income in 1987 cannot be the cause of self-esteem in 1980, and therefore the estimated value of *SEst(87)** is a pure predictor for the effect of self-esteem on income. The predicted values from this regression *SEst(87)** are saved and are the “instrumental variables” used in the next stage of the model. For the second stage, we conducted a regression equation using the newly created variable, with corrections to the standard errors to reflect the fact that the newly created variables were estimates rather than specific measurements. Then the estimated value for self-esteem in 1987 was used as a predictor of income in 1987:

$$income(87) = \beta_0 + \beta_1(age) + \beta_2(gender) + \beta_3(race) + \beta_4(ASVAB) \\ + \beta_5(educ(87)) + \beta_6(income(80)) + \beta_7(SEst(87)^*) + \varepsilon$$