The Bright Side of Bad Times: The Affective Advantages of Entering the Workforce in a Recession

Emily C. Bianchi

Abstract
This paper examines whether earning a college or graduate degree in a recession or an economic boom has lasting effects on job satisfaction. Across three studies, well-educated graduates who entered the workforce during economic downturns were more satisfied with their current jobs than those who entered during more prosperous economic times. Study 1 showed that economic conditions at college graduation predicted later job satisfaction even after accounting for different industry and occupational choices. Study 2 replicated these results and found that recession-era graduates were more satisfied with their jobs both early and later in their careers and even when they earned less money. A third cross-sectional study showed that people who entered the workforce in bad economies were less likely to entertain upward counterfactuals, or thoughts about how they might have done better, and more likely to feel grateful for their jobs, both of which mediated the relationship between economic conditions at workforce entry and job satisfaction. While past research on job satisfaction has focused largely on situational and dispositional antecedents, these results suggest that early workforce conditions also can have lasting implications for how people affectively evaluate their jobs.

Keywords: job satisfaction, workforce economic conditions, upward counterfactuals, gratitude, imprinting, recession-era graduates

When members of the class of 2009 searched for their first post-graduation jobs, they were met by the worst job market in a generation. The unemployment rate was at a 26-year high, several major banks had recently failed, and thousands of newly unemployed and highly skilled workers were flooding the labor market (Sum, Khatiwada, and Palma, 2010). Finding a job was extremely difficult. There were more than six job seekers for every job opening.

1 Goizueta Business School, Emory University
(Goodman, 2009), and hiring for new college graduates had dropped 35 to 40 percent in only a year (Collegiate Employment Research Institute, 2009). Even new graduates who did secure work were paid substantially less than their boom-time peers and often accepted jobs that did not require a college or graduate degree (Sum, Khatiwada, and McLaughlin, 2009).

In contrast, ten years earlier, when graduates of the class of 1999 received their degrees, they encountered a much more welcoming economic world. The unemployment rate was at a 30-year low, the United States economy was in its ninth straight year of expansion, and the stock market was steadily rising. Securing a job was relatively easy as many businesses struggled to find enough workers to fuel their growth (Martel and Kelter, 2000). It was considered by some to be the best economy the world had ever known (Greenspan, 1999).

Past work has shown that these very different economic conditions can have long-term consequences for career outcomes. Those who leave college or graduate school in a recession often earn less money even decades later (e.g., Oyer, 2006; Kahn, 2010; Oreopoulos, von Wachter, and Heisz, 2012). They also tend to secure lower-quality first jobs, which has compounding negative effects for later career success. For instance, one study found that economists who entered the academic job market during an economic downturn were less likely to receive prestigious first jobs, less likely to publish in top-tier journals, and less likely to work at top-ranked universities later in their careers (Oyer, 2006). As one economist put it, “. . . the labor market consequences of graduating . . . in a bad economy are large, negative and persistent” (Kahn, 2010: 303).

Despite the well-documented financial and career disadvantages of graduating in a recession, could these graduates actually be happier with their jobs? Decades of research on satisfaction suggests that how people feel about their outcomes does not always mirror the objective value of these outcomes (e.g., Lewin, 1935; Festinger, 1954; Thibaut and Kelley, 1959; Helson, 1964; Crosby, 1976). Rather, satisfaction depends largely on how people make sense of their results and the environment in which these events unfold. Consequently, even when people perform objectively worse, they sometimes feel subjectively better depending on the psychological context in which these outcomes are evaluated (e.g., Boles and Messick, 1995; Medvec, Madey, and Gilovich, 1995; Mellers et al., 1997; Galinsky, Mussweiler, and Medvec, 2002; Iyengar, Wells, and Schwartz, 2006). As Gilbert and Ebert (2002: 512) argued, “. . . satisfaction is a response not to the properties of outcomes but to the psychological construal of those outcomes.”

There are several reasons to expect that graduating in a bad economy may promote more favorable subjective evaluations, even amid objectively worse results. For one, those who enter the workforce during economic booms may be more likely to entertain upward counterfactuals, or consider ways they might have done better, a calculation that undermines satisfaction. These graduates typically have more real or perceived opportunities and seemingly greater control over chosen paths, conditions that often prompt counterfactual generation. Moreover, recession graduates may be more likely feel grateful for their jobs, an emotion that typically bolsters satisfaction. Because of the scarcity of employment opportunities for these graduates, a secured job is likely to be perceived as more valuable, intentionally conferred, and costly to the benefactor,
all conditions that promote gratitude. Given the relative stability of job attitudes over time and across contexts, these ways of experiencing and evaluating a job are likely to persist for years to come.

**JOB SATISFACTION AND ENTERING THE WORKFORCE IN A BAD ECONOMY**

While job satisfaction is among the most studied variables in organizational behavior (Spector, 1997), little if any research has examined whether macro environmental conditions might leave an enduring mark on how people experience and evaluate their jobs. Rather, past work has focused almost entirely on situational or dispositional antecedents (e.g., Davis-Blake and Pfeffer, 1989; Staw and Cohen-Charash, 2005), suggesting that job satisfaction depends on either the immediate external environment (e.g., Hackman and Oldham, 1980) or lasting internal dispositions (e.g., Staw, Bell, and Clausen, 1986). The majority of work on job satisfaction examines how mutable workplace conditions such as pay (e.g., Judge et al., 2010), procedural and distributive fairness (Colquitt et al., 2001), and social context (Salancik and Pfeffer, 1978) shape work attitudes. These accounts suggest that job attitudes are relatively malleable and can be changed by reconfiguring the immediate external environment. Consequently, for decades, much of the work on job satisfaction has explored how jobs could be redesigned to optimize satisfaction. Herzberg and colleagues (Herzberg, Mausner, and Snyderman, 1959; Herzberg, 1966) proposed that satisfaction could be increased by providing motivators such as recognition, advancement, and opportunities for personal growth, while dissatisfaction could be avoided by carefully aligning company policies and rewards with employees’ needs. Building on this work, Hackman and Oldham (1980) argued that employees would be more motivated, satisfied, and productive if their jobs were redesigned in ways that promoted skill variety, task identity, task significance, feedback, and autonomy. Each job, they suggested, could be quantified according to its motivating potential and its likelihood of engendering satisfaction and performance.

While the situational approach has received substantial empirical support (Davis-Blake and Pfeffer, 1989), there are several reasons to expect that job attitudes also have internal or dispositional sources (e.g., Staw and Ross, 1985; Staw, Bell, and Clausen, 1986). First, even within the same job, people often have substantially varied perceptions of job characteristics (O’Reilly, Parlette, and Bloom, 1980; Spector and Jex, 1991). Thus what seems like variety or autonomy to one person may seem like monotony or micro-managing to another. Second, job satisfaction is relatively stable over time and across situations. For instance, Staw and Ross (1985) found that job satisfaction remained fairly stable over five years, even when people changed roles or employers. Moreover, previous job satisfaction was a stronger predictor of current job satisfaction than either changes in salary or status. Similarly, a study of military employees found substantial consistency in job satisfaction over 10 years, only some of which could be explained by job characteristics (Steele and Rentsch, 1997).

Scholars have looked primarily to individual characteristics to understand why similar environments are perceived differently and why job attitudes are fairly resistant to temporal and contextual changes. Staw, Bell, and Clausen
(1986) traced job satisfaction to affective disposition early in life, suggesting that having a generally negative outlook in adolescence could help explain job attitudes up to fifty years later. Other dispositional work has linked job satisfaction to the Five Factor Model of personality (Judge, Heller, and Mount, 2002), positive and negative affectivity (Connolly and Viswesvaran, 2000), and positive core evaluations (Judge and Bono, 2001). Evidence has also pointed to a genetic component of job satisfaction, with one study finding that identical twins reared apart exhibited similar levels of job satisfaction even after controlling for the nature of their jobs (Arvey et al., 1989). These findings suggest that the characteristics people bring to organizations color how they perceive, experience, and affectively evaluate their work environments (e.g., Motowidlo, 1996).

Despite debates over the explanatory power of situational and dispositional approaches (e.g., Davis-Blake and Pfeffer, 1989; Staw and Cohen-Charash, 2005), job satisfaction research continues to be characterized by these two perspectives. As one recent examination put it, “. . . job satisfaction can be conceptualized as a function of situational conditions, personal characteristics, and interactions between both groups of variables” (Cohrs, Abele, and Dette, 2006: 363). But job satisfaction may also be a function of a third type of factor: early workforce experiences. In particular, early-career macro-environmental factors may leave a lasting imprint on how people make sense of and evaluate their jobs even long after the situational context has changed. Like situational approaches to job satisfaction, this perspective suggests that job attitudes will be influenced by transient factors outside of an individual’s control. Yet, much like dispositional approaches, this view suggests that these situations will continue to color how people feel about later work contexts. Thus, while past work highlights the importance of the proximal work environment and the enduring characteristics of the worker within it, the present work focuses on societal level conditions that can shape job satisfaction in ways unexplained by existing approaches. In particular, it examines whether the economic conditions at workforce entry leave a lasting imprint on how people perceive, experience, and evaluate their jobs. First, I consider why graduating in a recession might confer affective advantages and focus in particular on two processes that are likely to be differentially triggered by varying economic conditions: upward counterfactuals and gratitude. Next, I focus on why these ways of thinking about and evaluating work may persist for years to come.

**Counterfactuals: Fixating on Unchosen Paths**

Even when people do objectively better, they often feel subjectively worse if they can readily generate upward counterfactuals, or easily imagine how things might have turned out better. For instance, Medvec, Madey, and Gilovich (1995) found that Olympic silver medalists were less satisfied with their outcomes than bronze medalists even though they clearly secured better results. Silver medalists, they argued, felt worse because they agonized over whether a faster stroke or a smaller splash might have earned them a gold medal. This fixation on how they might have done better dampened their satisfaction with what they had achieved. Other studies similarly suggest that when people can easily imagine better outcomes, they tend to be less satisfied with clearly superior results, including higher grades (Medvec and Savitsky, 1997), greater
monetary outcomes (Boles and Messick, 1995; Mellers et al., 1997), higher-paying jobs (Iyengar, Wells, and Schwartz, 2006), and better-negotiated deals (Galinsky et al., 2002; Naquin, 2003).

There are several reasons to expect that people will be more likely to entertain upward counterfactuals, or better imagined worlds, if they enter the workforce during prosperous times. For one, real or perceived opportunities tend to elicit counterfactuals and evoke regret (e.g., Kahneman and Tversky, 1982; Markman et al., 1993; Larrick and Boles, 1995; Schwartz, 2004; Naquin, 2003; Roese and Summerville, 2005). When there are more opportunities, decisions remain cognitively open, the past is more easily undone, and the ways one might have improved are creatively limitless (e.g. Kahneman and Miller, 1986; Schwartz, 2004; Roese and Summerville, 2005). For instance, one study found that negotiators who were given more issues to consider and potentially more opportunities for mutually beneficial integrative agreements were less satisfied with their outcomes even though these outcomes were objectively better (Naquin, 2003). When more issues were introduced, there were multiple ways the negotiation might have progressed. As a result, these negotiators could more readily imagine different scenarios and tended to fixate on how different sequences might have rendered greater rewards. Conversely, when opportunities are scarce and alternatives are less salient, people tend to optimize what they do have rather than dwell on what they do not (e.g., Boles and Messick, 1995; Gilovich, Medvec, and Chen, 1995; Gilbert and Ebert, 2002).

For those who enter the workforce when the economy is flourishing, there are presumably more actual or imagined paths to consider (“Should I have taken that teaching job in San Francisco?” “Should I have started my own company?”) and consequently more opportunities for second-guessing and rumination. Much like the negotiator who can more easily imagine different ways events might have progressed, these graduates are more likely to wonder whether unchosen paths might have yielded greater outcomes. Conversely, recession-era graduates typically entertain fewer real or imagined job opportunities. Even those who secure jobs rather easily often recognize their good fortune (e.g., Gerdes, 2009) and are less likely to believe that numerous worlds remain unexplored. Consequently, these graduates are less likely to dwell on better possible outcomes and more apt to attend to the positive features of the jobs they hold.

Furthermore, people are particularly likely to generate upward counterfactuals when their outcomes are under their control (e.g., Markman et al., 1995; Roese and Olson, 1995) and when different results are nearly achieved (e.g., Kahneman and Tversky, 1982). Counterfactual generation is tied to the ease with which the past can be mentally undone (Kahneman and Miller, 1986). When outcomes feel self-determined and other roads seem within reach, alternative sequences are more easily accessible and more frequently entertained. Entering the workforce in an economic boom or slump is likely to influence how much control people feel they have over their job choice and how reasonably attainable other outcomes may seem. In a recession, new graduates typically accept whatever jobs they can find. It is less apparent how their actions might have changed their outcomes and less clear that other directions were nearly attained. In an economic boom, a selected job is apt to feel largely self-determined, and alternative paths may seem within close reach. For these graduates, other courses of action are likely to be more salient, easily evoked,
and affectively costly, making the job they accepted seem less appealing and satisfying.

Challenging Times and Gratitude

Rather than agonizing over what might have been, recession-era graduates may be more apt to feel grateful for what they do have, a sentiment that often bolsters satisfaction (McCullough, Emmons, and Tsang, 2002; Watkins et al., 2003; Park, Peterson, and Seligman, 2004). A growing body of work highlights the individual and relational benefits of gratitude. Gratitude promotes trust (Gino and Schweitzer, 2008), engenders social support (Wood et al., 2008), and helps people derive meaning from adverse events (Frederickson et al., 2003). Experiences of gratitude can also leave an immediate and long-term mark on satisfaction by directing attention to the positive dimensions of a situation (McCullough, Emmons, and Tsang, 2002; Emmons and McCullough, 2003). When people feel grateful, they typically optimize what they do have rather than dwell on what they do not.

While most research has either experimentally manipulated gratitude (e.g., Emmons and McCullough, 2003) or measured it as an enduring individual difference (McCullough, Emmons, and Tsang, 2002), some evidence suggests that gratitude can be triggered by environmental events. For instance, levels of gratitude among Americans increased substantially after the September 11th terrorists attacks and remained high even a year later (Peterson and Seligman, 2003). Moreover, those who experienced gratitude more effectively weathered the crisis and were less likely to suffer from depression in the following months (Frederickson et al., 2003).

There are several reasons why progressively worse economic conditions may engender increasingly greater levels of gratitude among new graduates. First, people are particularly apt to experience gratitude when they have received something valuable (Tesser, Gatewood, and Driver, 1968; McCullough, Emmons, and Tsang, 2002). During recessions, there are fewer job openings and a larger, more talented pool of applicants (Bewley, 1999). Finding a job is substantially harder. In 2009, only 20 percent of college seniors seeking post graduation employment had secured a job by the spring of their senior year, down from 50 percent two years earlier (National Association of Colleges and Employers, 2009). It is likely that a job obtained in this unfavorable climate would be perceived as substantially more valuable than one secured when employers were scrambling to attract well-educated workers.

Gratitude is also triggered by the perception that the benefit or job is costly to the benefactor and intentionally conferred (McCullough, Emmons, and Tsang, 2002). As economic conditions deteriorate, hiring assumes greater real and perceived costs. For many organizations, adverse macroeconomic conditions reduce profits, restrict organizational spending, limit access to credit, and promote risk aversion (Bewley, 1999), making the relative costs of hiring greater. Finally, perceptions of the benefactor’s intentionality are likely to be higher in bad economies. Given the greater number of job applicants applying for each job during a recession and the higher costs associated with bringing in new workers, a selected employee is more likely to feel that he or she was intentionally and deliberately chosen. Members of the class of 2009 who managed to secure a job in a very tight labor market frequently described
themselves as “thankful,” “fortunate,” and “lucky,” despite the difficulty of their initial labor market experiences (Gerdes, 2009).

The Lasting Imprint of Early Experiences

While research on counterfactuals and gratitude suggest that recession-era graduates will be more satisfied with their jobs initially, work on imprinting suggests that these ways of thinking about and evaluating a job are likely to endure. Although research on job attitudes has largely overlooked whether exogenous conditions can leave a lasting imprint, research in other disciplines suggests that formative environmental conditions can influence attitudes and behavior even long after the situational context has changed. For instance, a substantial body of work in organizational theory highlights the lasting implications of external founding conditions on the forms and behaviors of organizations. Stinchcombe (1965) argued that organizations are indelibly molded by the characteristics of the historical period in which they were founded, and other work has linked environmental founding conditions to later organizational structures (Meyer and Brown, 1977), strategies (Boeker, 1988), and the likelihood of survival (Swaminathan, 1996).

Although most imprinting work in management considers how founding conditions shape organizations, a few studies suggest that organizational environments can similarly imprint individuals. For instance, in an in-depth study of biotechnology firms, Higgins (2005) argued that organizational cultures leave an indelible mark on the career patterns and leadership styles of young managers. Biotech firms that prized managerial skills generated a disproportionate number of employees who later founded or ran other biotech firms. Yet firms that rewarded scientific achievement tended to spawn scientists rather than entrepreneurs. People who joined these firms early in their careers were particularly susceptible to these organizational imprints. Unlike more experienced workers whose behaviors and work styles were marked by previous organizational environments, those at the beginning of their careers had fewer preexisting approaches to work and were more receptive to the socializing cues of their organization. As they moved to new contexts, they often built companies that structurally, culturally, and strategically resembled the organizations in which they began their careers.

Broader macro-environmental conditions are likely to leave a similar imprint on work attitudes. Early workforce experiences typically occur during young adulthood, a life stage characterized by identity formation and attitude change (e.g., Mannheim, 1952; Levinson et al., 1978; Arnett, 2000). During this time, people typically first live on their own, complete their formal education, and find their first adult job. Scholars from a variety of traditions have similarly pointed to the impressionability of this period (e.g., Mannheim, 1952; Levinson et al., 1978; Arnett, 2000; Higgins, 2005), and in particular noted the malleability of attitudes during these years (e.g., Newcomb et al., 1967; Krosnick and Alwin, 1989). Moreover, after a period of rapid change in young adulthood, attitudes tend to remain relatively stable in later years (e.g., Newcomb et al., 1967; Staw and Ross, 1985; Lubinski, Schmidt, and Benbow, 1996; Steele and Rentsch, 1997). Once attitudes are established, people tend to selectively attend to and interpret events in ways that reinforce their existing perspectives (e.g., Sherif and Hovland, 1961; Lord, Ross, and Lepper, 1979).
Moreover, social and political events that take place in young adulthood can shape attitudes and beliefs that last throughout life (e.g., Mannheim, 1952; Inglehart, 1981; Strauss and Howe, 1991; Giuliano and Spilimbergo, 2009). As people leave the insular world of childhood and become active participants in the adult world, they typically develop an interest in and greater dependence on the larger macro-environment. The conditions they encounter can mold their attitudes and beliefs for years to come. For instance, those who enter adulthood during wartime tend to be particularly concerned with national and economic security much later in life regardless of current political and economic conditions (e.g., Inglehart, 1997). Qualitative accounts suggest that societal conditions or events during this life stage become incorporated into one’s worldview (e.g., Schuman and Scott, 1989). Events that occur after these impressionable years, however, are often assigned global rather than personal significance and interpreted through the lens of an already established outlook.

A growing body of research finds that macroeconomic conditions during these years can leave a particularly indelible imprint on later attitudes and behaviors (Giuliano and Spilimbergo, 2009; Malmendier and Nagel, 2011; Malmendier, Tate, and Yan, 2011). For instance, people who experienced a recession in young adulthood are more likely to support government redistribution and more likely to believe that success comes from luck, even decades after these macroeconomic shocks (Giuliano and Spilimbergo, 2009). Those who endured periods of economic volatility during their impressionable years are less likely to participate in the stock market later in their lives and tend to invest more conservatively if they do (Malmendier and Nagel, 2011). Moreover, executives who came of age during economic downturns tend to be wary of acquiring company debt (Malmendier, Tate, and Yan, 2011) and typically employ more conservative management styles (Schoar and Zuo, 2012). In the same way that organizations are molded by the external conditions of their early years, individuals are shaped by the macro-environmental conditions of their early adulthood.

Whereas past research has shown that national events and economic recessions in particular can have lasting implications for social and political beliefs as well as economic and workplace behavior, this paper examines whether early workforce macroeconomic conditions will similarly influence how people think about and evaluate their jobs. Much in the way that founding environments and early socialization experiences can shape how organizations are constructed (e.g., Stinchcombe, 1965) and how individual careers progress (Higgins, 2005), early workforce macroeconomic conditions are likely to affect how people think about and evaluate current and future jobs. For those who begin their careers in an economic boom, a job may be something they take for granted and wonder if they chose wisely. For those who enter the workforce in a recession, a job may be something to be grateful for, and they may not question whether they optimally selected.

**Hypothesis 1:** People who enter the workforce during more difficult economic times will be more satisfied with their jobs even years after these early workforce experiences.

In addition, people who enter the workforce during difficult economic times should be less likely to entertain upward counterfactual thoughts about how
they might have done better and more likely to experience gratitude for their current jobs:

Hypothesis 2: Those who enter the workforce during worse economic times will be less likely to entertain upward counterfactual thoughts about how they might have done better. Upward counterfactuals will mediate the relationship between workforce entry conditions and job satisfaction.

Hypothesis 3: Those who enter the workforce during worse economic times will be more likely to feel grateful for their jobs, which will mediate the relationship between workforce entry economic conditions and job satisfaction.

These hypotheses were tested in one longitudinal and two cross-sectional studies. Study 1 drew on 24 years of data from the General Social Survey to examine whether people who graduated from college during challenging economic times were more satisfied with their current jobs. Study 2 utilized a longitudinal dataset to assess whether these effects emerged both early and later in people’s careers, even when recession-era graduates earned less, and among both college and graduate school cohorts. Finally, Study 3 employed a cross-sectional survey of working adults with graduate degrees to examine whether upward counterfactuals and gratitude mediated the relationship between workforce entry conditions and job satisfaction. In all three studies, I focused on respondents with college or graduate degrees, given that past research has shown that graduating in a recession exacts financial and status costs for these populations (e.g., Oyer, 2008; Kahn, 2010). For those without a college degree, rarely are times so flush that they can reasonably consider multiple opportunities (Van Horn et al., 2012). Moreover, because perceptions of opportunities, control over one’s outcomes, and the value of a job are likely to change in step with economic conditions, the relationship between economic entry conditions and job satisfaction is likely to be linear, though I examine this assumption in all three studies.

STUDY 1: GRADUATING FROM COLLEGE IN A RECESSION AND JOB SATISFACTION

Overview and Sample

Study 1 utilized survey data from the General Social Survey (GSS), a large nationwide survey conducted by the National Opinion Research Center (Smith et al., 2008). GSS participants are drawn from a probability sample of non-institutionalized adults and are considered representative of the United States’ population (Singleton and Straits, 2005). The survey consists of a core group of questions that is included in every administration as well as rotating modules that focus in depth on various social, economic, and political topics. The GSS was conducted annually from 1972 until 1993 (with the exception of 1979, 1981, and 1992) and consisted of approximately 1,500 respondents each year. Beginning in 1994, it was conducted biannually and included approximately 3,000 to 4,500 respondents each year.

The sample in Study 1 was drawn from all GSS data collected between 1975 and 2008. Respondents were included if they were employed full time, had valid responses to all dependent and independent variables, and held a
Bachelor’s but not a graduate degree. Study 1 was limited to college graduates because although the GSS collects information about birth year and highest degree received, it does not regularly gather information about the year participants earned their highest degree. For college graduates, I estimated the year of college graduation by adding years enrolled in college to age 18, the modal year of college entry in the United States. For those with graduate degrees, it was not possible to reliably estimate when participants earned this degree based on the information available. Furthermore, I limited the sample to respondents who entered the workforce after 1974 in order to exclude anyone who came of age during the Great Depression or World War II or who graduated during the Vietnam draft, which were such psychologically consequential times that they may override the more subtle economic fluctuations that followed (e.g., Elder, 1974). The resulting sample consisted of 1,942 participants who graduated from college between 1975 and 2007 and entered the workforce in a range of economic climates, as summarized in table A.1 in the Online Appendix (http://asq.sagepub.com/supplemental). The United States went through four recessions during this time period (National Bureau of Economic Research, 2012), and the unemployment rate ranged from a low of 4.0 percent in 2000 to a high of 9.7 percent in 1982. On average, participants had been in the workforce for 10.73 years (S.D. = 7.11) and were currently 33.11 (S.D. = 7.14) years old at the time of the interview.

Measures

Workforce entry economic conditions. Workforce entry economic conditions were gauged using the national unemployment rate in the year of college graduation. The unemployment rate is arguably the best indicator of the national economic mood and perceived difficulty of finding a job. It is also the indicator that has been used by economists to show that people who graduate in recessions have lower incomes (e.g., Kahn, 2010) and worse career outcomes (e.g., Oyer, 2006).

Job satisfaction. Two measures of job satisfaction were used. The first was the job satisfaction question that is included in every GSS administration: “On the whole, how satisfied are you with the work you do—would you say you are very satisfied, moderately satisfied, a little dissatisfied, very dissatisfied?” Responses were reverse coded so that higher scores reflected greater satisfaction and is referred to here as “JS1.” Though single-item measures are often criticized for having limited reliability, single-item measures of job satisfaction are often better predictors of other organizational behaviors than more multifaceted job satisfaction scales (Nagy, 2002) and do not suffer a substantial loss in reliability (Wanous, Reichers, and Hudy, 1997). To further mitigate concerns about using a single-item dependent variable, I re-ran all analyses using a composite measure of job satisfaction for the subset of people who answered an additional job satisfaction question in 2002 and 2006. During those two years, the GSS asked participants: “All in all, how satisfied would you say you are with

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1 Another approach would be to estimate that all respondents received their degree at age 22. This approach yields similar results in all models shown in table 2. I present results that estimate college graduation by adding actual years of college to age 18 because in the few years (1993–1996) that the GSS asked people the exact year they earned their highest degree, this estimate was a slightly better predictor of the actual graduation year than the year respondents turned 22.
your job?” on a scale ranging from “very satisfied” (1) to “not at all satisfied” (4). This item was reversed coded and combined with the first job satisfaction item to create a composite measure (α = .84) and is referred to here as “JS2.”

**Control and dummy variables.** I included control variables that past research suggests are important predictors of job attitudes. These included age (e.g., Warr, 1992), age squared (Clark, Oswald, and Warr, 1996), gender (e.g., Clark, 1997), income (e.g., Judge et al., 2010), and tenure in current job (Bedeian, Ferris, and Kacmar, 1992). Tenure information was only available for the subsample of the population that also answered the additional job satisfaction question. Income was gauged using an approximate measure computed by the GSS. Historically, the GSS has collected income information categorically, and these categories have changed over time. In the late 1980s the GSS began estimating a comparable measure of income for all participants by assigning each respondent the median income level of their selected category and adjusting for inflation (Ligon, 1994). This figure was adjusted to year 2010 dollars and log transformed.

In addition, dummy variables for survey year were included to control for time-trend effects, given evidence that job satisfaction has decreased in recent years (Gibbons, 2010). Industry and occupational dummies were also included to examine whether any support for hypothesis 1 could be explained by differences in the types of industries or occupations people entered. Industry dummies were based on the 17 general categories from the 1980 Industry Classification System. Occupational dummies were created using the six major categories identified by the 1980 Standard Occupational Classification (SOC) system.  

**Results**

Means, standard deviations, and correlations for all variables are shown in table 1. The unemployment rate at workforce entry was positively correlated with both measures of job satisfaction, such that people who graduated from college during difficult economic times were happier with their jobs, even though most respondents were many years removed from those initial experiences. Table 2 includes the results of OLS regressions predicting both measures of job satisfaction. Model 1 includes controls for income, age, age squared, gender, and survey year dummies. For the two-item measure of job satisfaction, tenure was also included as a control because this information was available for this subsample. Consistent with hypothesis 1, in all models, the unemployment rate at workforce entry remained positively predictive of both measures of job satisfaction. This variable accounted for an additional 1-percent increase in explained variance for JS1 and a 3-percent increase in explained variance for JS2 above and beyond the other variables in the model.

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2 For 341 respondents, industry and occupation were coded by the GSS using 1970 industry and occupational classifications. These observations were recoded into 1980 industry and occupational codes using crosswalks available on the U.S. Census website.

3 Ordered logistic regressions produce similar results in all studies and models reported in the paper. Given the greater difficulty of interpreting these models, I report OLS regression results.
Models 2 and 4 include dummy variables for current occupation and industry. If economic conditions influence the types of industries or occupations new graduates enter and if these industries or occupations vary in average job satisfaction, then this could explain support for hypothesis 1. Controlling for industry and occupational differences, however, the positive relationship between the unemployment rate at workforce entry and job satisfaction remained significant for both measures of job satisfaction.

To further evaluate the magnitude of these effects, I examined predicted levels of job satisfaction at different economic entry conditions, holding all other variables in models 2 and 4 at their mean levels. Graduating in the worst

Table 1. Means, Standard Deviations, and Correlations, Study 1 (N = 1,942 Unless Otherwise Noted)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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</thead>
<tbody>
<tr>
<td>1. Workforce entry unemployment rate</td>
<td>6.99</td>
<td>1.35</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>2. JS1 (N = 323)</td>
<td>3.33</td>
<td>0.75</td>
<td>.06**</td>
<td>.18**</td>
<td>.93**</td>
<td></td>
<td></td>
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<tr>
<td>3. JS2 (N = 323)</td>
<td>3.35</td>
<td>0.68</td>
<td>.06*</td>
<td>.13**</td>
<td>.19**</td>
<td></td>
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<tr>
<td>4. Income (ln)</td>
<td>10.00</td>
<td>0.79</td>
<td>.23**</td>
<td>.04</td>
<td>.08</td>
<td>.34**</td>
<td></td>
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<tr>
<td>5. Age</td>
<td>33.11</td>
<td>7.14</td>
<td>.04</td>
<td>.08</td>
<td>.34**</td>
<td></td>
<td></td>
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<tr>
<td>6. Age2</td>
<td>1147.46</td>
<td>507.66</td>
<td>.23**</td>
<td>.04</td>
<td>.08</td>
<td>.33**</td>
<td>.99**</td>
<td></td>
</tr>
<tr>
<td>7. Male</td>
<td>0.50</td>
<td>0.50</td>
<td>.12**</td>
<td>.08</td>
<td>.21**</td>
<td>.03</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>8. Tenure (N = 323)</td>
<td>6.50</td>
<td>6.85</td>
<td>.36**</td>
<td>.08</td>
<td>.12*</td>
<td>.29**</td>
<td>.55**</td>
<td>.56**</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01.
* JS1 reflects the single job satisfaction item collected every year. JS2 reflects a composite satisfaction item that comprises JS1 and an additional job satisfaction question that was collected in 2002 and 2006.

Table 2. OLS Regressions Predicting Single-item and Composite Measure of Job Satisfaction, Study 1*

<table>
<thead>
<tr>
<th>Variable</th>
<th>JS1 (N = 1,942)</th>
<th>JS2 (N = 323)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>Workforce entry unemployment rate</td>
<td>0.044* (0.014)</td>
<td>0.048** (0.015)</td>
</tr>
<tr>
<td>Income (ln)</td>
<td>0.127** (0.026)</td>
<td>0.112** (0.024)</td>
</tr>
<tr>
<td>Age</td>
<td>−0.018 (0.024)</td>
<td>−0.016 (0.023)</td>
</tr>
<tr>
<td>Age2</td>
<td>0.000 (0.00)</td>
<td>0.000 (0.00)</td>
</tr>
<tr>
<td>Male</td>
<td>−0.001 (0.035)</td>
<td>0.047 (0.036)</td>
</tr>
<tr>
<td>Tenure</td>
<td>0.006 (0.007)</td>
<td>0.004 (0.007)</td>
</tr>
<tr>
<td>R²</td>
<td>0.03</td>
<td>0.07</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01.
* Unstandardized coefficients, with robust standard errors in parentheses. All models include year dummies; models 2 and 4 include dummies for industry (17) and occupation (6).
economy experienced during this period (unemployment rate = 9.7 percent) as opposed to the average economy (unemployment rate = 7.0 percent) was associated with a .14 (4 percent) increase in JS1 and a .33 (9 percent) increase in JS2, all else equal. Moreover, graduating in an average economy as opposed to the best economy (unemployment rate = 4.0 percent) was associated with a .14 (4 percent) increase in JS1 and a .31 (11 percent) increase in JS2. Across the range of economic entry conditions observed in this study, graduating in the worst as opposed to the best economic conditions was associated with a .28 increase in JS1 (range: 3.18–3.46) and a .64 increase in JS2 (range: 3.08–3.72). While the magnitude of these effects appears relatively small, the range of the dependent variable was fairly restricted. Although response options ranged from 1 to 4, 87.9 percent of JS1 and 86.7 percent of JS2 responses were either a 3 or a 4, with most respondents indicating that they were either somewhat satisfied (coded 3) or very satisfied with their jobs (coded 4). Given this restricted range, a .28 (JS1) or .64 (JS2) increase across the range of experienced economic conditions is fairly substantial.

I also tested for the possibility that the relationship between the unemployment rate at graduation and job satisfaction was non-linear. For instance, one possibility is that job satisfaction increases with worsening economic entry conditions up to a point and then declines. To test for non-linear effects, I re-ran all the four models shown in table 2 with the addition of a squared term for the unemployment rate at workforce entry. The squared term was not significantly related to job satisfaction in any of these models.

Selection considerations. I tested for two types of selection concerns that could provide alternative accounts for these results. First I examined whether people who graduated in recessions were more likely to drop out of the workforce and thus less likely to appear in the sample. If, for instance, the least capable members of a graduating class were more likely to be selected out of the workforce in a recession than in a boom and these least capable graduates tended to be less satisfied, then this could provide an alternative account for why, on average, recession-era graduates reported greater job satisfaction. I evaluated this possibility by looking at whether economic conditions at workforce entry predicted the likelihood of college graduates being employed full time and included in the sample or (1) employed part time (N = 510) or (2) unemployed/temporarily not working (N = 238). Results of two separate logistic regressions controlling for age and gender showed that the unemployment rate at college graduation did not significantly predict whether college graduates in this sample were working full time rather than part time or working full time rather than unemployed or temporarily out of work. These results are consistent with past research suggesting that economic conditions at college graduation do not predict the likelihood of employment years later (Kahn, 2010).

Another possibility is that economic conditions may influence which college graduates pursue graduate degrees. Because Study 1 only included college graduates without graduate degrees, I examined whether economic conditions at college graduation predicted the likelihood of obtaining a graduate degree. An additional 828 respondents received a graduate degree and had valid
responses to all independent and dependent variables. Because precise college graduation dates were not available for those with graduate degrees, I used the national unemployment rate at age 22 to estimate economic conditions at college graduation for this sample. A binary logistic regression controlling for age and gender found that those who graduated from college in times of higher unemployment were less likely to obtain graduate degrees (0 = college degree, 1 = graduate degree; b = -.177, S.E. = .030, \( p < .001 \)). This raises the possibility that differences between new college graduates who pursue additional education depending on the economy they encounter at college graduation could provide an alternative explanation for these results.

One approach to addressing this issue is to combine the college and graduate school samples and examine whether economic conditions at college graduation predict job satisfaction for this combined sample (Kahn, 2010; Oreopolous, von Wachter, and Heisz, 2012). Using this approach and including the controls shown in model 1, economic conditions at college graduation remain predictive of both measures of job satisfaction (JS1, b = .023, S.E. = .011, \( p < .05 \); JS2, b = .057, S.E. = .027), though the effects were notably reduced. This suggests that the observed relationship between workforce entry economic conditions and job satisfaction cannot be fully accounted for by differences in graduate school enrollment depending on economic conditions. But it also suggests that economic conditions at college graduation are particularly influential for those graduates who enter the workforce and do not pursue additional education, as the results show that among those with graduate degrees, college graduation economic conditions did not predict later job satisfaction. Given these results, I examined graduate and college samples separately in Study 2.

STUDY 2: GRADUATING IN A RECESSION AND JOB SATISFACTION OVER TIME

Study 2 drew on data from the National Longitudinal Survey of Youth (NLSY79), a federally funded longitudinal survey that began following the educational and labor market experiences of a cohort of 12,686 young adults in 1979. All respondents were born between 1957 and 1964 and were interviewed annually until 1994 and biannually thereafter. Study 2 included NLSY79 data collected between 1979 and 2008. Like the GSS, the NLSY79 includes demographic information and educational history for all participants as well as a global measure of job satisfaction.

Study 2 was designed to build on Study 1 in several ways. For one, the NLSY79 contains more detailed information about graduation year. This allowed for an examination of whether similar effects emerged for people with graduate degrees. In addition, a longitudinal dataset that followed the same people for decades enabled a better test of the nature of the relationship between the state of the economy at graduation and job satisfaction and how this relationship evolved over time. Finally, Study 2 included a more precise income measure, which allowed for an examination of whether greater satisfaction could coexist with lower earnings. The income measure in Study 1 was too imprecise to reliably evaluate this possibility.
Participants and Procedure

I identified the highest degree each respondent received and the year this degree was conferred by following responses to educational questions over time. Beginning in 1988, participants were asked to report their highest degree, the type of degree, and the year this degree was conferred. This information was updated in subsequent survey administrations if additional degrees had been earned. Responses to this question were used to identify year of college and graduate school graduation. The sample was restricted to those who received at least a BA or a BS, and received their highest degree at or before age 30 and thus were not likely to have been in the workforce for many years before completing their college or graduate degrees. It was also limited to those who graduated before 1994 in order to follow all respondents for fifteen years following graduation.\(^4\) The resulting sample consisted of 1,638 people who received college or graduate degrees.\(^5\) Because economic conditions at college graduation in Study 1 only predicted job satisfaction for those who did not go on to graduate school, I divided the population into those who earned college degrees and those who earned graduate degrees. Moreover, for those who are highly educated, the first job after their highest degree is likely to mark the beginning of one’s career.

Participants were included in the college sample if they earned their college degree by age 31, did not subsequently earn a graduate degree, and had valid responses to the control variables and at least one valid job satisfaction and income observation. The resulting sample consisted of 1,330 people who graduated from college between 1979 and 1993. The majority of this sample was female (51.9 percent) and white (75.0 percent). Some participants graduated during the economic crisis of 1982 and 1983 when the unemployment rate exceeded 9 percent, while others graduated during more favorable economic times, such as 1979, when the unemployment rate was 5.8 percent, or 1989, when it dipped to 5.3 percent. I also looked at two subsamples of the college population to evaluate whether similar effects emerged among college graduates who earned their college degrees at more traditional ages and thus did not spend a substantial amount of time in the workforce before finishing college. First, I included only those who graduated at age 21, 22, or 23 (N = 890). Second, I restricted the sample even further by only looking at those who graduated at age 22 (N = 526).

The graduate sample consisted of 308 participants who graduated between 1979 and 1993. The majority of this sample was white (80.5 percent) and male (52.6 percent). Most of these graduates held Master’s degrees (72.8 percent), while the rest held professional degrees, including Ph.D.s, M.D.s, L.L.D.s, and D.D.S.s.\(^6\) Again, I considered two more parsimonious subsamples of this

---

\(^4\) Only two people were eliminated who received a college degree before age 31 but did not earn it before 1994. Results are similar whether or not these two respondents are included.

\(^5\) This represents a relatively small percentage of the initial sample for several reasons. First, budgetary cuts led to significant sample reductions in 1985 (N = 1,079) and 1991 (N = 1,643). Secondly, the initial sample substantially overrepresented Hispanic, black, and economically disadvantaged non-black/non-Hispanic youths (N = 5,295) and those enrolled in the military (N = 1,280), populations that are less likely to obtain college and graduate degrees.

\(^6\) Eleven members of the graduate sample received more than one graduate degree. On average, this additional education did not substantially change the type of economy they encountered when they graduated, and I considered the most recent graduate degree in all analyses. When I restricted the sample to those who only received one graduate degree, results were similar.
population. The first subsample was limited to people with Master’s degrees who spent two years or less in the workforce before going back to graduate school or received a professional degree by age 30 and therefore did not likely spend much time working between college and graduate school (N = 259). The second subsample included only those who received professional degrees (N = 84).

**Job satisfaction.** During each survey administration, participants were asked a global job satisfaction question, “How do you feel about the job you have now? Do you like it very much, like it fairly well, dislike it somewhat, or dislike it very much?” This item was recoded so that higher scores reflected greater satisfaction. For all respondents, job satisfaction responses were followed for fifteen years after they received their degree and were only analyzed during the years respondents were currently employed.

**Workforce entry economic conditions.** As in Study 1, workforce entry economic conditions were measured using the national unemployment rate during the year each respondent received his or her college or graduate degree.

**Controls.** Controls for experience and experience² were included because the relationship between age and job satisfaction has been shown to be both linear (e.g., Warr, 1992) and curvilinear (Clark, Oswald, and Warr, 1996). While experience and age are slightly different, I used experience to evaluate whether the relationship between economic conditions at workforce entry and job satisfaction changed as experience increased. Experience and experience² reflected the number of years since receiving a college or graduate degree. Gender was also included as a control and coded 0 = female and 1 = male.

Income was assessed during each survey administration using hourly wage at the respondents’ primary job. This number was adjusted for inflation to year 2000 dollars and log transformed. This adjusted variable has been used to show that people graduating from college during recessions suffer long-term wage losses (Kahn, 2010). I used it to control for income in analyses on job satisfaction and to predict earnings in subsequent income analyses. Income observations that were less than $4.50 an hour were dropped because adjusted to year 2000 dollars, this was the lowest level that the national minimum-wage rate reached during the study period. Observations of more than $1000 an hour were also dropped, as these observations appeared to reflect weekly, monthly, or annual income rather than hourly wages. Finally, I controlled for industry and occupation using the 1990 industry and occupational classification systems. Because different occupation and industry codes were used in different survey years, all observations were recoded into the seven major occupation and 14 major industry categories using previously established reconciliation tables (Ruggles et al., 2010).

**Results**

Summary statistics and correlations for all independent and dependent variables are shown in Online Appendix tables A.2 and A.3 (http://asq.sagepub.com/supplemental). Table 3 presents OLS regression results for all primary samples and subsamples. In these models, standard errors were clustered by individual to account for the non-independence of multiple within-person
observations. I included an interaction term for experience and workforce entry economic conditions to evaluate how the relationship between workforce entry economic conditions and job satisfaction changed over time. As shown in table 3, the unemployment rate at workforce entry was a significant predictor of job satisfaction for all college and graduate samples. Moreover, as shown in figure 1, for all college samples, the interaction between workforce entry economic conditions and experience was significant and negative, suggesting that the effect of the unemployment rate at workforce entry diminished over time and for the primary sample disappeared after approximately nine years in the workforce. For the graduate samples, this interaction term was not significant, and the effect of workforce entry conditions at graduation persisted over 15 years of observations.

I also examined whether increased satisfaction among recession-era graduates could coexist with reduced earnings. I re-ran the same models shown in table 3, removing the salary parameter and using it as the dependent variable. The unemployment rate at workforce entry was a significant predictor of income for the college sample (b = −.016, S.E. = .008, p < .05) but not for the graduate sample (b = −.000, S.E. = .020).7

Follow-up analyses. An imprinting argument would suggest that early workforce conditions affect job satisfaction early in one’s career as well as

7 In table 3, similar results emerged whether or not income was included as a control variable. Thus the relationship between workforce entry and job satisfaction still emerges even without adjusting for lower salaries among recession-era graduates.
years later. To evaluate this possibility, I examined whether economic entry conditions predicted early-career job satisfaction. I focused on the first two years following graduation to ensure that the majority of respondents were both employed and successfully interviewed by the NLSY79. As shown in table 4, in all samples and subsamples, economic conditions at workforce entry predicted job satisfaction during the two years following graduation, suggesting that recession-era graduates were more satisfied with their jobs early in their careers as well as years later. Economic entry conditions explained approximately 1 percent in additional variance beyond the other predictors across the college samples and between 1 percent and 3 percent in additional variance across the graduate samples. Moreover, as in Study 1, the addition of a squared term for the unemployment rate did not significantly predict job satisfaction in any of the models.

As in Study 1, I also examined predicted levels of job satisfaction in different economic entry environments. For college graduates, a one-point increase in the unemployment rate at graduation was associated with a .04-point increase in job satisfaction in the first two years of employment as well as a 2.9-percent decrease in starting salary. For graduate students, a one-point increase in the unemployment rate at graduation was associated with a .05-point increase in job satisfaction but no significant difference in income ($p > .10$). Moreover, entering the workforce in the worst economic conditions (unemployment rate = 9.7 percent) as opposed to average economic conditions experienced by these respondents (unemployment rate$_{\text{college}}$ = 7.6 percent; unemployment rate$_{\text{graduate}}$ = 6.8 percent) was associated with a .08-point increase in job satisfaction for the college sample and a .12-point increase for the graduate sample, all else being equal. Graduating in an average economy compared with the best
economy (unemployment rate = 5.3 percent) was associated with a .09-point increase in job satisfaction for the college sample and a .06-point increase in job satisfaction for the graduate sample. Over the range of economic entry conditions, graduating in the worst as opposed to the best economic environment was associated with a .16 increase in job satisfaction for college graduates and a .18 increase for graduate students. As in Study 1, the range of job satisfaction responses was fairly restricted, with the vast majority of respondents reporting that they liked their job “fairly well” (coded 3: 40.55 percent) or “very much” (coded 4: 51.54 percent).

Although this paper focuses on psychological explanations for why recession-era graduates are more satisfied with their jobs, it is plausible that non-psychological differences between recession- and boom-era graduates could provide alternative explanations for these results. One possibility is that recession-era graduates may change occupations and industries more frequently to make up for suboptimal entry conditions. If greater mobility is positively related to satisfaction, then this could provide an alternative explanation for the observed effects. To evaluate this possibility, I calculated the number of times each respondent changed industries or occupations over 15 years of observations and examined whether mobility was related to workforce entry economic conditions. In fact, those who graduated in bad economic times did change occupations (rcollege = .101, p < .001; rgraduate = .135, p < .05) and industries (rcollege = .095, p < .01; rgraduate = .121, p < .05) more frequently. I then examined whether the cumulative number of occupational and industry changes at each survey administration predicted job satisfaction. I ran a series of OLS regressions in which job satisfaction was regressed on either cumulative industry or occupational changes, controlling for the number of years in the workforce given that cumulative changes were highly related to work experience. Cumulative industry and occupational changes were not significant

Table 4. OLS Regressions Predicting Job Satisfaction in the First Two Years of Employment, Study 2*

<table>
<thead>
<tr>
<th>Variable</th>
<th>College Sample</th>
<th>Graduate Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary Sample (N = 1,244)</td>
<td>Subsample 1 (N = 845)</td>
</tr>
<tr>
<td>Workforce entry unemployment</td>
<td>0.040** (0.014)</td>
<td>0.045* (0.017)</td>
</tr>
<tr>
<td>Income (ln)</td>
<td>0.214** (0.044)</td>
<td>0.227** (0.051)</td>
</tr>
<tr>
<td>Male</td>
<td>0.003 (0.037)</td>
<td>0.033 (0.043)</td>
</tr>
<tr>
<td>Observations</td>
<td>2,193</td>
<td>1,495</td>
</tr>
<tr>
<td>R²</td>
<td>0.08</td>
<td>0.08</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01.

Robust standard errors are in parentheses and clustered by individual. Industry and occupational dummies are included in all models. Data included observations from the first two years of employment following college or graduate school graduation. Because job satisfaction scores and pay figures were not available for all participants, the sample sizes in these analyses are smaller than those reported in table 3.
predictors of job satisfaction in any of the samples. Most importantly, when either cumulative occupational or industry changes were added to the models shown in table 3, the relationship between workforce entry economic conditions and job satisfaction did not meaningfully change. Thus, though there was some evidence that economic conditions affected mobility across industries and occupations, these differences did not account for the relationship between workforce entry conditions and job satisfaction.

Discussion

Study 2 again showed that the economic conditions people encountered when they entered the workforce influenced job satisfaction for years to come. Moreover, for the college sample, this effect emerged even when recession-era graduates earned less money. Study 2 also provided evidence of the durability of this effect. For the graduate sample, the relationship between workforce entry economic conditions and job satisfaction persisted throughout 15 years of observations and did not meaningfully weaken over time. For the college sample, the effect diminished over time. There are several possible reasons for this difference. Methodologically, the graduate sample was smaller and on average entered the workforce later. Because data were collected biannually after 1994, participants were more likely to have missing data in the later years of observation, potentially making it harder to detect these changes. Alternatively, those with graduate degrees are typically older, have more financial and familial obligations, and are less likely to feel that they can temporarily opt out of bad economic conditions by going back to school again. Thus the stakes of their first job market experiences may be higher and the initial economic circumstances they encounter may be more psychologically consequential.

STUDY 3: UNDERLYING PSYCHOLOGICAL MECHANISMS

The primary goal of Study 3 was to examine the psychological mechanisms underlying the relationship between early workforce economic experiences and job satisfaction. Hypotheses 2 and 3 suggest that economic entry conditions will influence the likelihood of generating upward counterfactuals and feelings of gratitude, both of which could mediate the relationship between economic conditions at graduation and job satisfaction. Study 3 was designed to test these hypotheses. Study 3 also examined whether economic conditions at workforce entry predicted job satisfaction over and above well-established dispositional and situational predictors.

Participants

Two hundred and forty-seven working adults (60.4 percent female, 85.9 percent white) with graduate degrees participated as voluntary members of an online research panel. I focused on people with graduate degrees given evidence of the durability of the effect among this population in Study 2. As in Study 2, participants were included if they received their graduate degree by age 31. Data for 26 participants was not included because information was missing for at least one independent or control variable. Post hoc analyses indicated that workforce entry economic conditions were not significantly different for those with
incomplete data. Of the remaining 222 respondents, the average age was 40.8 years old (S.D. = 10.9). Participants earned their degrees between 1975 and 2011 and had been out of graduate school for an average of 15.1 years (S.D. = 10.7). Over half the participants reported having unspecified Master’s degrees (61.7 percent) or MBAs (16.7 percent). Others received law degrees (9.9 percent), medical degrees (4.5 percent), or doctorates (7.2 percent).

Measures

Job satisfaction. Job satisfaction was assessed using Quinn and Shepard’s (1974) six-item measure. A sample item was “All things considered, how satisfied are you with your current job,” with responses ranging from “not at all satisfied” (1) to “very satisfied” (5) (α = .94).

Counterfactual thinking. Counterfactual thinking was assessed using a four-item scale from the non-referent subscale of Rye et al.’s (2008) counterfactual thinking measure. Participants were asked how frequently they had each type of thought about their job. A sample item included “I think about how much better things could be” (α = .91).

Gratitude. The gratitude measure was adapted from McCullough, Emmons, and Tsang’s (2002) six-item gratitude questionnaire. Items were adapted to reflect gratitude about one’s job rather than unspecified, global gratitude. A sample item included “If I had to list everything that I felt grateful for in my job, it would be a very long list” (α = .87).

Control variables. As in Study 1, I controlled for income, age, age squared, and gender. I also controlled for job tenure, which was only available in the subsample analyses in Study 1. As in Study 1, income was assessed categorically, participants were assigned the median income level in their category, and this figure was log transformed. Subsequent models also included controls for industry and occupation. Occupation was gauged using the 13 categories from the 2010 Standard Occupational Classification and Coding Structure. Industry was gauged using the 12 general categories in the 2012 North American Industry Classification System.

Situational and dispositional predictors. Situational and dispositional measures were included to examine whether workforce entry economic conditions

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8 I also included a measure of downward counterfactual items drawn from the non-referent downward subscale of Rye et al.’s (2008) counterfactual thinking scale. A sample item was “I think about how much worse things could be” (α = .83). The unemployment rate at workforce entry was not correlated with the propensity to consider downward counterfactuals (r = .07, p > .10), perhaps because people often do not spontaneously generate downward counterfactuals (e.g., Kahneman and Miller, 1986; Roese and Olson, 1995).

9 As in Study 2, I examined whether workforce entry economic conditions predicted the likelihood that people changed industries at different rates depending on whether they graduated in a recession. Only 25.1 percent of participants reported that their current industry was different from their first-job industry. A binary logistic regression controlling for the number of years since the respondent joined the workforce showed that economic conditions at workforce entry did not significantly predict the likelihood of changing industries (b = -.053, S.E. = .10). Moreover, industry changes did not predict job satisfaction. Occupational changes were not assessed in these analyses because only current occupation was collected.
predicted job satisfaction even after accounting for well-established external and internal predictors. I assessed situational predictors using the five characteristics—autonomy, feedback, task identity, skill variety, and task significance—identified in Hackman and Oldham’s (1976) Job Characteristics Model. Each facet was specified using slightly modified versions of Hackman and Oldham’s (1976) definitions. Participants were asked the extent to which each dimension was present in their jobs on a response scale ranging from “not at all” (1) to “a tremendous amount” (7). A sample item included “Autonomy: The degree to which your job provides substantial freedom, independence, and discretion in carrying out work.”

A dispositional predictor consisted of a measure of the five major facets of personality, often called the Big Five, which past work has shown predicts job satisfaction (Judge, Heller, and Mount, 2002). The Big Five were assessed using the Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, and Swann, 2003). Two items were used to measure each Big Five facet. For example, an item assessing emotional stability included “I am anxious, easily upset” (reverse scored) ($\alpha = .64$). Responses ranged from “strongly disagree” (1) to “strongly agree” (7). Although the alphas for these constructs were relatively low, this is likely because each construct only included two items, and Cronbach’s alpha is highly dependent on the number of items in the scale. These alphas are similar to those found in large studies validating this measure (Gosling, Rentfrow, and Swann, 2003). Despite low alphas, this measure is highly correlated with more comprehensive Big Five instruments and similarly predicts job satisfaction (Credé et al., 2012).

**First job variables.** Finally, participants were asked several questions about the first full-time job they held after receiving their graduate degrees. Respondents were asked to report how satisfied they were with that job, how much they earned, how many job offers they seriously considered before accepting this job, as well as which of the 12 industry categories best described that job. First job satisfaction was assessed by asking participants, “Overall, how satisfied were you with that job,” with responses ranging from (1) “not at all satisfied” to (7) “extremely satisfied.” Annual income for this job was adjusted to 2010 dollars using the Consumer Price Index and log transformed. Eighteen respondents either could not recall their first salary or failed to report it and were dropped from these follow-up analyses.

**Results**

Means, standard deviations, and zero-order correlations for all variables are shown in table 5. Consistent with hypothesis 1, the unemployment rate at workforce entry was positively correlated with job satisfaction ($p < .05$). As shown in table 6, this relationship remained significant when controls for income, age, age squared, gender, and tenure were added (model 1) as well as when occupation and industry controls were added (model 2). Moreover, the unemployment rate at workforce entry remained positively related to job satisfaction even after controlling for job characteristics and the Big Five factors of personality (model 3), suggesting that early workforce economic experiences provide unique information about job satisfaction above and beyond traditional
Table 5. Means, Standard Deviations, and Correlations, Study 3 (N = 222)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Workforce entry unemployment rate</td>
<td>6.38</td>
<td>1.67</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Job satisfaction</td>
<td>3.68*</td>
<td>1.05</td>
<td>.13*</td>
<td>(94)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Income (ln)</td>
<td>41.06</td>
<td>10.99</td>
<td>.19**</td>
<td>.10</td>
<td>.26**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Age</td>
<td>1806.41</td>
<td>964.55</td>
<td>.23**</td>
<td>.10</td>
<td>.24**</td>
<td>.99**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Age²</td>
<td>0.48</td>
<td>0.50</td>
<td>-.02</td>
<td>-.04</td>
<td>.11</td>
<td>.08</td>
<td>.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Tenure</td>
<td>8.98</td>
<td>8.47</td>
<td>.13*</td>
<td>.26**</td>
<td>.65**</td>
<td>.65**</td>
<td>.13*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Autonomy</td>
<td>5.65</td>
<td>1.39</td>
<td>.54**</td>
<td>.11</td>
<td>.10</td>
<td>.11</td>
<td>.02</td>
<td>.11</td>
<td></td>
<td></td>
<td></td>
</tr>
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*p < .05; **p < .01.
*Coefficient alphas are in parentheses for multi-item measures.

As in Studies 1 and 2, the addition of a squared term for the unemployment rate did not significantly predict job satisfaction in any of the models.
As in the previous studies, I examined the incremental variance explained by workforce entry economic conditions as well as predicted levels of job satisfaction in different economic entry environments. Workforce entry economic conditions explained an additional 3.5 percent of the variance in model 1 and 4.7 percent in model 2. Moreover, holding all other variables in model 2 at their mean levels, graduating in a weak economy (unemployment rate = 9.7 percent) rather than an average economy (unemployment rate = 6.4 percent) was associated with a .48 (13.1 percent) increase in job satisfaction on a five-point scale. Graduating in an average economy rather than the best economy (unemployment rate = 4.0 percent) was associated with a 0.35 (10.5 percent) increase in

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\* \(p < .10\); \** \(p < .05\); \*** \(p < .01\).

\* Robust standard errors are in parentheses. Models 2–6 included dummies for occupation (13) and industry (12).
job satisfaction. Across the range of economic entry conditions observed in this study, graduating in the worst as opposed to the best economic conditions was associated with a .83 increase in job satisfaction (range: 3.34–4.17). These effects are noticeably larger than many of those shown in Studies 1 and 2. This may be because the measure of job satisfaction in Study 3 consisted of a well-validated, multiple-item scale, whereas the measures in Studies 1 and 2 consisted of one item on a relatively constrained scale (1–4). Moreover, the data in Study 3 were collected during a relatively short window of time (1 month) and using a consistent medium (an online survey), whereas the data in Studies 1 and 2 were collected over many years, using many different surveyors, potentially adding additional noise to the dependent measure.

Mediation. Next, I examined whether the relationship between economic conditions at workforce entry and job satisfaction was mediated by upward counterfactuals and gratitude, using Baron and Kenny’s (1986) four-step mediational procedures. Steps 1 and 2 require the independent variable to be related to both the dependent variable and the mediators. As previously noted, there was a positive relationship between workforce entry economic conditions and job satisfaction. Moreover, including the controls shown in model 2, two separate regressions showed that workforce entry economic conditions significantly predicted upward counterfactuals \((b = -0.216, S.E. = .071, p < .01)\) and gratitude \((b = 0.176, S.E. = .058, p < .01)\). Step 3 requires the mediator to remain a significant predictor of the dependent variable even after controlling for the independent variable, and step 4 requires the relationship between the independent and dependent variables to be significantly reduced after controlling for the mediator. To assess the third and fourth steps, I ran three separate regressions, adding each mediator to the model separately (models 4 and 5) and then simultaneously (model 6). In support of step 3, when upward counterfactuals (model 4) and gratitude (model 5) were entered separately into each model, they remained significant predictors of job satisfaction. Moreover, when upward counterfactuals and gratitude were entered simultaneously (model 6), they both remained significant predictors of job satisfaction. Consistent with step 4, in all three cases, the relationship between economic conditions at workforce entry and job satisfaction became either marginally significant (model 4) or insignificant (models 5 and 6).\(^{11}\)

To further evaluate support for step 4, I examined whether the indirect effects of upward counterfactuals and gratitude both independently and together were significantly different from zero. Bootstrapping analyses based on 1,000 re-samples (Preacher and Hayes, 2008) showed significant indirect effects for both upward counterfactuals (model 4; \(b = .076, 95\) percent CI = .032, .139) and gratitude (model 5; \(b = .112, 95\) percent CI = .045, .181). When upward counterfactuals and gratitude were included simultaneously, the

\(^{11}\) Because the counterfactual items from Rye et al.’s (2008) scale seem to reference counterfactual thoughts about one’s job, I also included two items to gauge counterfactuals about one’s career and unchosen paths. These items included “I often think about how I could have done better in my career,” and “I often think that there are better jobs out there for me.” This composite was highly correlated with the reported counterfactual scale \((r = .72)\) and behaved similarly in models 4 and 6 shown in table 6, suggesting that recession-era graduates generate fewer counterfactuals about how both their current job and unchosen paths might have been better.
indirect effect of both mediators was significant, and the 95-percent confidence intervals did not include zero (model 6; \( b = .123 \), 95 percent CI = .054, .204).

These results provide support for hypotheses 2 and 3.

Additional analyses. As in Study 2, I also evaluated whether those who graduated in more difficult economic times reported being more satisfied with their first job. As shown in table 7, workforce entry economic conditions were positively correlated with first job satisfaction. Moreover, as shown in table 7, these results remained significant after controlling for first job income, age, and age squared (model 1) as well as for first job industry (model 2). These results provide suggestive evidence that people who graduate during times of high unemployment are more satisfied with their jobs early in their careers as well as years later. To be sure, these results should be interpreted with some caution given the inherent limitations of retrospective reports (e.g., Golden, 1992). Yet similar effects emerged in Study 2, when job satisfaction was measured both during the first years of employment and over a decade later. Taken together, the findings from Studies 2 and 3 suggest that recession-era graduates are more satisfied with their jobs both early and later in their careers.

Discussion

Study 3 showed that the economic conditions people encountered when they first entered the workforce predicted job attitudes years later. People who graduated in more challenging economic times were more satisfied with their

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Table 7. OLS Regressions Predicting Satisfaction with First Job, Study 3 (N = 204)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workforce entry unemployment rate</td>
<td>0.157* (0.068)</td>
<td>0.161** (0.070)</td>
</tr>
<tr>
<td>First job income (ln)</td>
<td>0.458** (0.157)</td>
<td>0.443** (0.163)</td>
</tr>
<tr>
<td>Age at first job</td>
<td>–0.755* (0.450)</td>
<td>–0.748* (0.453)</td>
</tr>
<tr>
<td>Age at first job(^2)</td>
<td>0.015 (0.009)</td>
<td>0.015 (0.009)</td>
</tr>
<tr>
<td>Male</td>
<td>0.222 (0.231)</td>
<td>0.445* (0.252)</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>.09</td>
<td>.14</td>
</tr>
</tbody>
</table>

\* Robust standard errors are in parentheses. Respondents reported first job income, which was adjusted for inflation and log transformed. Eighteen respondents either could not recall their first salary or failed to report it and were dropped from these analyses. Model 2 includes dummies for industry (12).

\^\(^\) Although the unemployment rate at graduation predicted job satisfaction, the number of actual job opportunities graduates reported considering was not predictive using the same control variables in table 6, model 1. This suggests that the relationship between workforce entry economic conditions and job satisfaction is driven more by perceived opportunities than actual choice.
current jobs even long after these early workforce experiences had passed. Study 3 also identified two psychological mediators of this effect: upward counterfactuals and gratitude. People who entered the workforce during economic booms were more likely to consider ways that their job might be better and less likely to feel grateful for where they ended up. Both upward counterfactuals and gratitude mediated the relationship between workforce entry economic conditions and job satisfaction. Study 3 also showed that the relationship between early workforce economic conditions and job satisfaction emerged even after controlling for well-established situational and dispositional predictors. These results suggest that early workforce macro-environmental factors can provide unique information about job satisfaction above and beyond classic situational and dispositional antecedents.

GENERAL DISCUSSION

The present findings suggest that exogenous experiences in young adulthood can leave a lasting imprint on job attitudes for years to come. Across three studies, people who entered the workforce when the economy was faltering and jobs were hard to find were happier with their current work than those who first searched for jobs during more prosperous times. Even when recession-era graduates earned less money, they still reported greater satisfaction with their jobs both early and later in their careers. Study 3 also highlighted two psychological mediators of this relationship: upward counterfactuals and gratitude. People who graduated in worse economic times were less likely to fixate on ways they might have done better and more likely to feel grateful for the jobs they held.

These findings have several implications for the literature on job satisfaction. First, while past research has focused on how proximal external conditions (e.g., Hackman and Oldham, 1980) or internal dispositions (e.g., Staw, Bell, and Clausen, 1986) shape job satisfaction, the present work suggests that early workforce macro-environmental conditions can also influence how people think about and evaluate their jobs. In Study 3, macroeconomic conditions at graduation continued to predict job satisfaction even after controlling for situational and dispositional factors, suggesting that early workforce conditions can provide unique information about job attitudes above and beyond well-established antecedents. While the present work focuses on job satisfaction, early workforce conditions may similarly influence other important job attitudes such as organizational commitment or organizational citizenship behavior and behavioral outcomes such as tenure or absenteeism.

Secondly, while past work has shown that job satisfaction remains fairly stable throughout adulthood (Staw and Ross, 1985; Steele and Rensch, 1997), it has looked primarily to personality characteristics to account for this stability (e.g., Judge, Heller, and Mount, 2002). The present findings suggest that early workforce experiences may reveal another source of this stability. Much in the way that personality shapes how people perceive and respond to their work environments, early-career environmental conditions appear to similarly influence how they make sense of and evaluate their jobs. Although this paper focuses on economic conditions during young adulthood, the accompanying reasoning suggests that other important macro events or even personal experiences during this life stage may be similarly influential.
While the central objective of this work is to suggest that early workforce conditions can have lasting implications for job satisfaction, these findings also contribute to work on upward counterfactuals and gratitude. Past work has shown that entertaining better imagined worlds or experiencing gratitude have divergent implications for outcome satisfaction and general well-being. The present studies suggest that they influence job attitudes as well. This work also ties counterfactual generation and expressions of gratitude to strong, temporally distant experiences. While previous research has identified conditions that prompt counterfactual generation and gratitude, nearly all of this work considers upward counterfactual generation and gratitude expressions immediately following specific, personally relevant events rather than broader societal conditions. The current research suggests that macro-environmental experiences in early adulthood can continue to trigger counterfactual generation and feelings of gratitude long after conditions have changed.

Finally, the present findings contribute to a growing body of research suggesting that some lifetime adversity is associated with greater well-being than either too much or too little adversity (Seery, Holman, and Silver, 2010). By most accounts, receiving a college or graduate degree during a recession presents a substantial amount of adversity. Yet most well-educated recession-era graduates secure employment within a few years following graduation (Oreopolous, von Wachter, and Heisz, 2012), and their likelihood of being employed years later is typically unaffected (Kahn, 2010). Thus for the average well-educated graduate, first looking for work in a recession may pose enough adversity to promote positive subjective evaluations but not so much that it ultimately breaks one's resolve. If so, there is likely a limit to how difficult early economic conditions can become before satisfaction is likely to suffer. The recessions encountered by participants in the current studies were relatively short lived and fairly shallow (National Bureau of Economic Research, 2012). Subsequent work could examine whether more prolonged and deeper economic downturns, such as the most recent one, will also leave a long-term mark on job satisfaction. This reasoning also suggests that similar affective advantages might not emerge among those with less education. Those without a college degree are typically hit the hardest by recessions (Carnevale, Jayasundera, and Cheah, 2012), and even in good economic times these new graduates rarely entertain multiple opportunities (e.g., Van Horn et al., 2012). Thus entering the workforce in a recession with a high school degree may pose too much adversity to bolster affective evaluations. I did not empirically evaluate this possibility in the current studies but believe it is an important area for future research.

Limitations and Future Directions

Although two of the studies in this paper draw on data from large and highly representative national samples, this research does have some shortcomings that also point to potential areas for future research. First, while this paper treats macroeconomic entry conditions as exogenous shocks with long-term affective implications, graduation timing is not entirely random, and it is certainly possible that there may be important differences between those who graduate in recessions or booms. While I cannot entirely rule out this possibility, the robustness of these effects to alternative samples and specifications...
suggests that these results cannot easily be explained by selection differences. For instance, in Study 1, similar results emerged if college graduation was estimated at age 22. Moreover, in Studies 2 and 3, similar effects emerged among subsamples of graduates who earned their degrees at more traditional ages, suggesting that it is unlikely that these results are driven by those who waited out a bad economy by staying in school.

Further, while this paper focuses on psychological mediators of the relationship between early workforce economic conditions and job satisfaction, future work could explore whether differences in career trajectories and progressions might also explain this effect. Much of the sociological work on imprinting suggests that founding conditions affect subsequent outcomes in part because they shape the course of paths later on. Thus economic conditions at graduation may affect how people’s careers unfold and the types of jobs they initially select and subsequently inhabit. While industry and occupational controls in all three studies suggest that the central relationship cannot be accounted for by different industry or occupational choices or even industry and occupational mobility (Study 2), future work could consider a more fine-tuned examination of how economic conditions shape career choices and trajectories and whether these differences also help explain the relationship between early workforce economic conditions and job satisfaction.

Future investigations could also explore whether gratitude and counterfactuals trigger different interpersonal processes between new graduates and their employers. For instance, initial expressions of gratitude from a new employee might prompt a positive sequence of events. When people feel grateful, they are more willing to trust and take advice from others (Gino and Schweitzer, 2008), and others are more likely to invest energy and resources to help them succeed (Grant and Gino, 2010). Thus initial feelings of gratitude may encourage additional time investment and mentoring from employers and likely reinforce satisfaction (Ragins, Cotton, and Miller, 2000). Conversely, employees who appear preoccupied with other possibilities are not likely to engender the same level of investment and mentoring, which may in turn reinforce their tendency to wonder about other options.

Moreover, subsequent examinations could explore whether these psychological mechanisms, and in particular upward counterfactuals, might help explain why people who graduate in economic booms continue to enjoy greater financial success well into their careers. While generating counterfactuals often undermines satisfaction, it can also highlight corrective courses of action and identify pathways for future success (e.g., Markman et al., 1993; Roese, 1994; Galinsky et al., 2002). Thus people who graduate in economic booms may maintain their early financial and career advantages by continually focusing on how they could be doing better, an approach that may promote career and financial success while undermining satisfaction.

Finally, future work could consider other mechanisms underlying the relationship between early-career economic conditions and job satisfaction. For instance, entering the workforce during an economic downturn also may temper expectations and ease extrinsic aspirations, prompting people to evaluate their outcomes in light of a lower and more affectively favorable standard (e.g., Locke, 1976; Kasser and Ryan, 1993). Moreover, recession-era graduates may be more likely feel they are doing well relative to their classmates, favorable social comparisons that are likely to bolster satisfaction (e.g., Festinger, 1954).
Conversely, boom-era graduates may believe they are lagging behind their peers, assessments that typically undermine satisfaction. Follow-up research could continue to explore these and other possible mediating mechanisms. In doing so, it could further elucidate how and why graduating in a recession continues to confer affective benefits even long after economic conditions have changed.

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Collegiate Employment Research Institute


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National Association of Colleges and Employers  

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Wanous, J. P., A. E. Reichers, and M. J. Hudy  

Warr, P. B.  


Author’s Biography

Emily C. Bianchi is an assistant professor of organization and management at the Goizueta Business School, Emory University, 1300 Clifton Road, Atlanta, GA 30322 (e-mail: emilybianchi@emory.edu). Her research examines how entering adulthood in a recession influences later attitudes and behaviors as well as how current economic conditions affect interpersonal interactions, social support, and cooperation. She received her Ph.D. in management from Columbia Business School.