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DOI: <https://doi.org/10.1016/j.obhdp.2017.09.003>

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Citation

SIROLA, Nina and PITESA, Marko. The macroeconomic environment and the psychology of work evaluation. (2018). *Organizational Behavior and Human Decision Processes*. 144, 11-24. Research Collection Lee Kong Chian School Of Business.
Available at: https://ink.library.smu.edu.sg/lkcsb_research/5353

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The macroeconomic environment and the psychology of work evaluation

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ARTICLE INFO

Keywords:

Attribution of responsibility
Macroeconomic environment
Generalized sense of control
Promotion and demotion decisions

ABSTRACT

This research tested the idea that the perception of the state of the macroeconomic environment impacts the psychology underlying an essential organizational function: The evaluation of employees' work and the associated promotion and demotion decisions. We predicted that when the macroeconomic environment is perceived to be more (less) prosperous, people's generalized sense of the extent to which individuals have control over outcomes increases (decreases), leading them to attribute more (less) responsibility for work outcomes to individuals rather than contextual influences. In Study 1, we tested this theory using data from 124,400 respondents surveyed across 57 countries and 19 years and data about objective indicators of their macroeconomic environments. We found that in more prosperous times, people reported a higher generalized sense of control and were less likely to believe that contextual influences, such as luck, matter for work success. In Studies 2 and 3, we manipulated the perception of the macroeconomic environment among employees working in organizations, and we found that those who perceived their economic environment to be more prosperous had a higher generalized sense of control and in turn attributed more responsibility for a work outcome to the individual performing the work, resulting in more extreme promotion and demotion decisions. The consideration of the macroeconomic context of organizational decision making bridges the macro-micro divide in organizational sciences to provide a novel explanation for individual psychology and behavior underlying fundamental organizational processes.

1. Introduction

Evaluating employees' work and rewarding employees based on their performance is critical for the functioning of all organizations. At the same time, evaluating work can be challenging because most work is marked by some level of disconnect between the quality of the work itself and the outcomes the work produces (Denrell & Liu, 2012; Hunter, Schmidt, & Judiesch, 1990). Investors who make prudent decisions sometimes garner lower profits than those who take reckless risks, and the patients of doctors who recommend sensible treatments sometimes fare worse than the patients of doctors who recommend inferior treatments. Ultimately, organizations want to promote employees who do good work rather than employees whose work accidentally results in good outcomes. Thus, when work outcomes are imperfectly correlated with work quality, the ability to distinguish between good and bad workers depends on whether people accurately attribute responsibility for work outcomes to employees or to contextual influences such as chance.

A common finding in psychological and organizational research is that there is much variability and error in attributions of responsibility

for work outcomes (Baron & Hershey, 1988; Gilbert & Malone, 1995; Ross, 1977). By and large, people tend to err on the side of over-attributing responsibility to individuals at the expense of contextual influences. People overestimate stock brokers' ability to predict stock performance (Torngren & Montgomery, 2004), doctors' ability to influence disease progression (Baron & Hershey, 1988), auditors' ability to anticipate future financial problems of their clients (Anderson, Jennings, Lowe, & Reckers, 1997), and CEOs' ability to influence firms' performance (Meindl, Ehrlich, & Dukerich, 1985).

In this paper, we test a socioecological explanation of how people attribute responsibility for work outcomes and how they make the associated promotion and demotion decisions. As we noted, people generally over-attribute responsibility for work success to employees whose work outcomes are somewhat disconnected from work quality, such as CEOs. However, we also note that people seem to do so less when the economy is performing poorly, as suggested by the fact that during less prosperous periods, CEOs receive a relatively larger pay cut than do average employees (Mishel & Sabadish, 2013). There are likely other contributing factors for this trend, but we believe it is also possible that an awareness that the economy is in a more versus less prosperous state

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has transformative psychological consequences, altering people's understanding of individual agency, affecting whether they attribute responsibility for specific work outcomes to individuals or contextual influences, and impacting how they make promotion decisions.

Our theory is that experiencing more (less) economically prosperous periods increases (decreases) people's generalized sense of the extent to which individuals versus contextual factors such as luck have control over outcomes. That is, people update their naïve theory regarding the relative power of individual versus contextual influences in bringing about outcomes in the world as a function of changes in the macroeconomic environment. People are in turn influenced by their generalized sense of control when evaluating responsibility for specific work outcomes, so even when the situation is objectively the same (e.g., an outcome of a medical treatment was largely due to chance), people attribute greater responsibility to the individual who performed the work (a doctor in this example) when their generalized sense of control is higher. Thus, people will understand, interpret, and respond to objectively the same situation in which an employee performed a work task differently depending on their perception of the state of their macroeconomic environment. We test this theory in a large-scale study using data from 124,400 respondents surveyed across 57 countries and 19 years and objective indicators of their macroeconomic environments, and two experiments among U.S. employees working in organizations, in which we manipulated participants' perception of the state of the economy.

This research contributes to the organizational literature on work evaluations by identifying a hitherto overlooked factor influencing how people attribute responsibility for work outcomes and make associated promotion and demotion decisions. As we elaborated above, evaluations of work for which work quality and work outcomes are imperfectly correlated involve a great deal of error, mostly such that people over-attribute responsibility to individuals and underappreciate contextual influences. In light of this fact, the implications of the effect we identify can be understood in two ways. First, during less prosperous periods, people will be more likely to take into account contextual influences on work outcomes. Given that people generally err in the direction of underappreciating contextual influences, this response will tend to be functional and should render people more accurate in their evaluations of work during less prosperous periods. Second, in times of prosperity, when organizations generally face the least problems, managers will be most prone to under-appreciating the role of contextual influences, potentially leading to inefficient and unfair employee rewards (Arvey & Murphy, 1998). In this way, prosperous times may sow the seed of their own downfall. Managers should thus particularly emphasize policies targeted at making more accurate attributions during times of prosperity. We consider potential interventions implied by our research at greater length in the general discussion.

This research also contributes to the literature on attributions. Theory on attributions evolved from relatively static conceptualizations emphasizing the tendency to disregard contextual influences (Gilbert & Malone, 1995; Ross, 1977) to more nuanced models that incorporated determinants of whether and when people attribute responsibility for events to individuals versus contextual influences. While several more micro-influences have been identified, such as the perspective taken by the observer (Jones & Nisbett, 1972), emotions (Forgas, 1998; Keltner, Ellsworth, & Edwards, 1993), and motivational states (e.g. Malle, 1999; Miller & Ross, 1975; Sherman & Kim, 2005), the broadest and most important factor studied in this literature is that of cultural differences. This work found that people from more collectivist cultures tend to take into account the role of contextual factors to a greater extent than do people from more individualistic cultures (Miller, 1984; Morris & Peng, 1994). We contribute to this literature by identifying another large-scale factor determining whether people attribute responsibility to individuals versus contextual influences that adds to existing models of the psychology of attributions. The macroeconomic environment represents a broad explanatory factor because

changes in the state of the economy are ubiquitous. For example, the U.S. economy on average fluctuates between economic downturns and upturns roughly every five years over the last one hundred and fifty years (National Bureau of Economic Research, 2011). Because such economic changes occur irrespective of the culture of the given country, our theory may explain large-scale changes in attribution tendencies across as well as within countries.

The ubiquity of macroeconomic changes also highlights the importance of theoretically situating individual decision making in organizations in the broader macroeconomic environment, which constitutes a contribution of our work to organizational sciences more generally. People working in organizations are abundantly reminded of the state of their economic environment. The "stocks" application is among the few that comes pre-installed on many mobile phones, and virtually all newspapers involve a section reporting on the state of the economy. The experience and behavior of people in organizations arguably differs greatly during more relative to less prosperous periods. One illustration of this fact comes from studies reported in Sirola and Pitesa (2017), which found that during less prosperous times, employees start construing success in a more zero-sum manner and become less likely to help coworkers even when doing so does not come at the expense of their own success. Yet, such analyses of how individuals' psychology and behavior are impacted by the state of the macroeconomic environment are still rare in the organizational literature. This explanatory void is possibly due to a deeply rooted methodological divide in organizational sciences. Organizational researchers have traditionally been divided along a macro-micro line whereby individual and team processes have been studied separately from processes at the level of industries and economies (Bamberger, 2008). Our work seeks to transcend this divide. It is unrealistic to model the behavior of individuals in organizations by assuming that they are unaware of and unaffected by the broader economic context (Oishi & Graham, 2010). We hope that our work opens up avenues for explaining individual employee behavior in the context of a constantly changing economic environment.

2. Theory

2.1. Macroeconomic environment affects generalized sense of control

Terms such as "economic downturn," "economic upturn," "prosperous economy," and "recession" are descriptive accounts of the likelihood of business success at the level of an economic system, most commonly at the level of one country's economy (National Bureau of Economic Research, 2015). Thus, one fundamental property of more (less) prosperous economic periods is that they are marked by lower (higher) levels of uncertainty of success. That a certain economic period is more compared to less prosperous means that the average association between an economic endeavor (for example, trying to keep one's job, starting a business, or signing new clients) and success is stronger. During more prosperous economic periods, people are more certain to keep their jobs, see their businesses take off successfully, or sign new clients. During less prosperous periods, the same business endeavors face a lower likelihood of resulting in successful outcomes. Thus, more (less) prosperous periods are defined by a lower (higher) level of uncertainty of economic success. Bianchi (2016) found that people are quite sensitive to such changes in the state of the macroeconomic environment and report a greater need to manage uncertainty during less prosperous economic periods.

We propose that because less prosperous relative to more prosperous periods are associated with a greater uncertainty of the economic environment, they should reduce people's generalized sense of the extent to which individuals versus contextual factors such as luck have control over outcomes. Most people have some theory regarding the extent to which outcomes in the world are determined by individuals' own actions versus contextual influences such as luck (Rotter,

1966). We refer to this theory about the power of individuals versus contextual influences in bringing about desired outcomes in the world in *general* as a “generalized sense of control” to differentiate it from related constructs such as those focusing on more specific agents (e.g., one’s own control, or that of specific other people such as doctors) or more specific outcomes (e.g., control over mental or physical health more specifically).

People update their generalized sense of control in response to changes in one’s life situation. For instance, prior work found that generalized sense of control may drop when one finds oneself in a life situation marked by illness (Jamison, Lewis, & Burish, 1986), old age (Mirowsky, 1995) or personal unemployment (Goldsmith, Veum, & Darity, 1996). We argue that people will similarly update their generalized sense of control with perceived changes in the macroeconomic situation. Given the greater uncertainty stemming from the environment during less relative to more prosperous periods, it is relatively more correct at the general level that individuals have less control over desired outcomes during worse economic periods. As such, people may be relatively correct in updating their beliefs regarding the extent to which individuals versus the environment have control over outcomes during less prosperous economic periods. While this construal might be relatively accurate with respect to the general state of affairs in the world, it may bias people’s attributions of responsibility for *particular* work outcomes because people tend to be influenced by their generalized construal when judging particular situations, as we elaborate later.

Another reason why changes in the macroeconomic environment might influence generalized sense of control is that during less prosperous economic periods, people will on average experience some unpredictability in personal outcomes in life, from reduced employment security to lower likelihood of personal success in entrepreneurial business endeavors. Such experiences should further depress people’s generalized sense of the extent to which individuals versus contextual influences have control over outcomes because people tend to generalize from their own experience when thinking about the state of affairs in the world. Social projection theory and research suggest that people’s theories about others are strongly influenced by their own experiences (Cronbach, 1955; Ross, Greene, & House, 1977). For example, people base their inferences of how others feel (Van Boven & Loewenstein, 2003) and how extreme other people are in their political attitudes (Van Boven, Judd, & Sherman, 2012) on their own feelings and attitudes.

In sum, we propose that because people notice and experience the greater uncertainty that characterizes less (versus more) prosperous periods (Bianchi, 2016), they will update their generalized sense of control that individuals have over outcomes in the world. Research on socioeconomic status (Grossmann & Varnum, 2010; Kluegel & Smith, 1986; Kraus, Piff, & Keltner, 2009; Lachman & Weaver, 1998) and research on evolutionary life history theory (Mittal & Griskevicius, 2014) provide indirect support for this argument. Higher socioeconomic status, which entails being raised in an economically prosperous environment, is associated with a higher generalized sense of control (Grossmann & Varnum, 2010; Kluegel & Smith, 1986; Kraus et al., 2009; Lachman & Weaver, 1998). Research based on life history theory similarly found that when exposed to uncertainty, people raised in more affluent families perceive that they have substantially more control over outcomes than those raised in poorer families (Mittal & Griskevicius, 2014). In a similar vein, we believe that noticing and experiencing more compared to less prosperous economic conditions at the level of the entire economy should be associated with a higher generalized sense of control.

2.2. Generalized sense of control affects attributions for particular work outcomes

We further propose that differences in people’s generalized sense of

control brought about by perceived changes in the state of the economy should affect attributions of responsibility for specific work outcomes. Over some outcomes, employees have almost full influence. Simple manual labor such as digging a hole or moving objects from one place to another may fall into this category. Yet, even outcomes of such simple work can be influenced by contextual factors such as chance. For example, bad weather may interrupt the process of digging a hole, and other people may interrupt the process of moving an object from one place to another. Thus, even for simple tasks, it is possible to over-attribute responsibility for work outcomes (failure to perform the task in the examples above) to individuals who performed the work. The issue becomes more relevant with respect to more complex tasks that are typically marked by a lower level of influence that workers have over final outcomes (Denrell & Liu, 2012; Hunter et al., 1990). Technological research and development or medical research work fall into this category. Even if employees do everything well, it is possible for the work one puts into research (e.g., attempting to develop a new technology or a new drug) not to produce the desired result. Attempting to sign a client, investing in stocks, and prescribing a treatment for cancer all fall into the category of work that is marked by a substantial influence of contextual factors over work outcomes. Research shows that when outcomes are in part due to contextual influences such as chance, the quality of the work of those with best outcomes may in reality be no better than the quality of the work of those with average outcomes (Denrell & Liu, 2012). A favorable outcome in a situation strongly influenced by chance (e.g., a successful forecast of the “next big thing”) may actually be an indicator of poor rather than good performance (Denrell & Fang, 2010).

When there is ambiguity as to the extent to which an individual is responsible for a specific work outcome (e.g., a medical treatment that may have been successful due to luck or ability), we expect that people’s generalized sense of control will impact their attribution of responsibility for the work outcome. People tend to be influenced in their interpretation of particular situations both by the information contained in the situation as well as by their generalized beliefs pertaining to similar situations (Baldwin, 1992; Fiske, 1992; Lord, 1982; Niedenthal, Cantor, & Kihlstrom, 1985; Trzebinski, 1985). As Folkman (1984) notes, “in the absence of clear information, the situation is like a projective test, and the person makes inferences based on general [...] beliefs, to understand what is happening” (p. 841). For example, when evaluating whether a particular individual is trustworthy, people are influenced both by the information concerning the particular individual (e.g., reputation) as well as by their sense of the extent to which people are trustworthy in general (Colquitt, Scott, & LePine, 2007; Rotter, 1971). Those who believe that people in general are untrustworthy are more likely to believe that a particular individual is untrustworthy, even when the information they are presented with is objectively the same.

In a similar vein, we expect people to be influenced in their evaluation of responsibility for a particular work outcome (e.g., “was the medical treatment successful because of the doctor’s decisions or luck?”) both by the objective features of the situation (e.g., information on the doctor’s decision) as well as their generalized beliefs relevant to the situations (i.e., “in general, to what extent do individuals rather than contextual influences determine outcomes?”). Thus, even when the situation is objectively the same (e.g., a work outcome was largely due to contextual influences), a higher (lower) generalized sense of control that should be more salient during more (less) prosperous economic periods, as we argued above, should make people more prone to attributing work outcomes to individuals rather than contextual factors.

The logic presented above implies that even when facing a situation that is objectively the same (e.g., a medical treatment that resulted in a favorable outcome for the patient), people will understand the situation differently depending on the perceived state of the macroeconomic environment and the associated differences in their generalized sense of

control. The effect we predict should thus operate across the entire distribution of the objective contribution of contextual influences to the outcome. For instance, an outcome of a medical treatment is objectively unaffected by the state of the economy, yet we would still expect people exposed to cues of economically more (versus less) prosperous periods to attribute a greater responsibility for the outcome to the doctor as a result of their higher generalized sense of control. Taken together, the arguments presented above suggest that 1) the perception that the macroeconomic environment is more (versus less) prosperous will lead to a higher generalized sense of control, and 2) a higher generalized sense of control will make people more likely to attribute responsibility for work outcomes to individuals. We hypothesize:

Hypothesis 1. Perception that the economy is more (versus less) prosperous increases a generalized sense of control and, in turn, attribution of responsibility for work outcomes to individuals.

3. Overview of studies

We tested our theory using one passive observational and two experimental studies. Study 1 is a large-scale study using data from 124,400 respondents surveyed across 57 countries and 19 years that examined how the objective state of the local macroeconomic environment shapes people's generalized sense of control and, in turn, the extent to which they attribute work success to individuals versus contextual influences. The goal of the first study was to examine whether people's attitudes vary across actual economic environments in line with the predictions of our theory, but given the passive observational nature of the data, we conducted an additional two experimental studies (Studies 2 and 3) to strengthen the overall internal validity of our theory tests. Both experiments used a novel approach in which we manipulated the perception of the macroeconomic environment among people employed in organizations, measured their generalized sense of control and attributions of responsibility for work outcomes, and asked them to make promotion and demotion recommendations. Study 3 additionally included measures that allowed for a richer investigation of the psychological process (see Study 3 introduction for rationale and predictions).

This project has a dedicated Open Science Framework webpage (https://osf.io/2vnm7/?view_only=0e11eace79d34493a392917a8c9b6bc0) that contains materials, data, and analysis syntaxes for the new data collections we conducted (Studies 2 and 3). Data used in Study 1 are publically available through the webpages of the relevant institutions, as cited in the study description, and the project webpage contains extracted and merged variables used in our analyses, as well as the syntax for the analyses. There were no unreported exclusions in any of the studies.

4. Study 1: Large-scale field study

4.1. Measures

4.1.1. Macroeconomic environment measure

We operationalized whether the economy was in a downturn or upturn using GDP change, which captures within-country variation in the state of the economy. In addition, we conducted robustness checks using raw GDP and unemployment rate as alternative operationalizations of the macroeconomic environment to test our theory in a rigorous manner. These different indicators are used by institutions that provide estimates of the state of the economic environment (National Bureau of Economic Research, 2015) and were also used by prior research on the effects of economic environment on individual psychology (Bianchi, 2013; Hill, Rodeheffer, Griskevicius, Durante, & White, 2012). The data were obtained from the World Bank Development Indicator (WDI) database (The World Bank, 2015). WDI contains the most reliable internationally comparable information on macroeconomic situation,

compiled from official sources.

We note that our theory focuses on a perceived rather than objective state of the macroeconomic environment—people can respond to changes in the state of the economy only to the extent that they perceive them. In this study, we only had data on the objective state of the economy, but we note that prior work found that people are attuned to the state of the macroeconomic environment and that the responses to objective changes in the state of the economy tend to parallel responses to perceived changes, whether manipulated or measured (e.g., Hill et al., 2012; Sirola & Pitesa, 2017). We thus used the objective state of the economy to operationalize our independent variable in this study.

4.1.2. Generalized sense of control measure

Individual-level data were taken from the Integrated Values Surveys (IVS; 2015), which combines the European Values Study (2015) and the World Values Survey (2015) datasets. The integration of the two surveys was possible because of an overlap in questions, the same data collection design (pooled cross-sectional), sampling strategy (stratified random sampling of the population aged 18 years or older), and data collection procedure, involving primarily face-to-face interviews at respondents' place of residence (European Values Survey, 2017; Kittilson, 2007; World Values Survey, 2016). The resulting IVS presents the largest publicly available cross-national data collection on personal values and beliefs, including surveys conducted in 113 countries between 1981 and 2014. For the combination of variables that was of interest in this research, responses from 124,400 individuals surveyed across 57 countries and over a 19-year period, from 1995 to 2013, were available.

The measure of generalized sense of control started with a brief description of the construct. Respondents were told that "Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens." Next, respondents were asked to report how much freedom of choice and control they felt people had over outcomes in life on a scale ranging from 1 (*no choice at all*) to 10 (*a great deal of choice*). The key terms in the item are consistent with those used in most measures of sense of control (Mirowsky & Ross, 1991; Nowicki Jr. & Duke, 1974; Rotter, 1966).

4.1.3. Attributions of responsibility measure

The construct was measured on a 10-point scale. One endpoint (1) stated, "In the long run, hard work usually brings a better life," and the other endpoint (10) stated, "Hard work doesn't generally bring success—it's more a matter of luck and connections" (reverse coded). We reasoned that hard work on the one hand, and luck and connections on the other, served as good illustrations of the conceptual dichotomy of internal (individual agency) versus contextual influences on work outcomes. Our rationale is consistent with past work that used the same wording to operationalize internal versus contextual attributions (Feather & Simon, 1975; Garland & Price, 1977; Stevens & DeNisi, 1980).

Additionally, we conducted an independent data collection to examine how the IVS item relates to operationalizations of attributions of responsibility for success used in past research. We asked a sample of adults recruited online ($N = 202$) to indicate to what extent three factors typically referenced as internal (ability, intelligence, and effort; $\alpha = 0.81$) and three as contextual causes (luck, task difficulty, and accidents; $\alpha = 0.64$) in past work on attributions (Feather, 1969; Feather & Simon, 1971, 1972, 1975; Garland & Price, 1977; Simon & Feather, 1973; Stevens & DeNisi, 1980) impact whether "people's success at work, that is, succeed in their professional endeavors" on a scale ranging from 1 (*not at all*) to 5 (*completely*). In addition, half of the sample responded to the original IVS item, and half of the sample responded to the same item but without any mention to "connections" (which we thought could be somewhat ambiguous as an example of contextual influence). We found that our IVS attribution of responsibility item (reverse coded) correlated strongly and positively with items

attributing work success to internal causes ($r = 0.54, p < 0.001$) and strongly and negatively with items attributing work success to contextual causes ($r = -0.49, p < 0.001$). The correlations did not differ depending on whether the IVS item mentioned connections or not (tests of correlation strength difference: $z_s < 0.65, p_s > 0.521$). These results provide evidence of the convergent validity of our measure of attributions of responsibility.

4.1.4. Controls

We controlled for several key social group and socioeconomic indicators, as prior work found that people's social position affects their sense of control (Kraus et al., 2009). We controlled for respondents' sex (coded 0 for women and 1 for men), age, whether the respondent was working (coded 0 for no and 1 for yes), income level (ranging from 1 to 10, with 10 being the highest income level; for details see World Values Survey, 2015), and education (based on the CASMIN classification of educational attainment; Braun & Müller, 1997). Finally, we controlled for self-reported social class, measured on a scale ranging from 1 (upper class) to 5 (lower class) (reverse coded).

Although we conducted robustness checks with country fixed effects, as described below, we sought to control for country-level individualism versus collectivism in the main analysis because culture has been found to be an important determinant of attributions (Miller, 1984; Morris & Peng, 1994; Na et al., 2010; Varnum, Grossmann, Kitayama, & Nisbett, 2010). We extracted information from two data sources on national culture to minimize sample truncation due to inclusion of this control variable. The first data source is the individualism–collectivism index by Hofstede (2001). The second is the GLOBE individualism–collectivism index by House, Hanges, Javidan, Dorfman, and Gupta (2004). To supplement the Hofstede individualism–collectivism index, we focused on the in-group collectivism (practices) dimension of the GLOBE index, which has the same conceptual focus as Hofstede's index (Maleki & Hendriks, 2015). Consistent with this interpretation, the Hofstede individualism–collectivism index was strongly correlated with the in-group collectivism (practices) dimension of the GLOBE index ($r = 0.80, p < 0.001$) and less strongly with other indicators included in the GLOBE dataset ($r_s < 0.37$). Because the two indexes were on different scales, we rescaled each to range from zero (indicating a completely collectivist culture) to one (indicating a completely individualistic culture) before averaging them.

Table 1 reports means, standard deviations, and correlations for Study 1 variables.

4.2. Results and discussion

4.2.1. Theory test

We used regression analyses with robust standard errors. The robustness checks section below also describes a series of alternative analyses we conducted. Because the predictors were on different scales, we standardized them to facilitate the interpretation and comparison of

the effects. As displayed in Table 2 (Model 1), GDP change was positively related to respondents' sense of the extent to which individuals versus the environment have control over outcomes. Respondents' generalized sense of control was in turn positively related to the extent to which they attributed responsibility for work outcomes to individuals rather than contextual influences (Model 2). To test the indirect effect of the macroeconomic environment on attributions of responsibility for work outcomes through generalized sense of control, we calculated bias-corrected confidence intervals of the product of the two paths using the bootstrap method with 5000 samples (Shrout & Bolger, 2002). The confidence interval (CI) of the indirect effect did not cross zero [0.005, 0.011], indicating significant mediation. Thus, more prosperous economic periods were associated with a higher generalized sense of control and, in turn, higher levels of attributions of responsibility for work outcomes to individuals rather than contextual influences. The results support Hypothesis 1.

4.2.2. Robustness checks

We conducted a series of supplementary analyses to probe the robustness of our findings, and the regression tables as well as the syntax for the alternative analyses are available in the supplemental materials online. We reran the main analysis using the alternative operationalizations of the independent variable: raw GDP (instead of GDP change) and unemployment rate. The analyses using alternative operationalizations led to the same conclusions with respect to our hypothesis, such that coefficients for raw GDP were significant and in the same direction as coefficients for GDP change and coefficients for unemployment were significant and in the opposite direction than coefficients for GDP change.

We also reran the main analysis using several alternative model specifications, all of which found effects consistent with those obtained from the main analysis. First, following Aktas, Gelfand, and Hanges (2016), we used multilevel modeling to account for the fact that observations were nested within countries. Second, we reran the main analysis adding in fixed effects for country. Third, we reran the main analysis adding in a variable denoting year of data collection to account for potential time trends in our independent and dependent variables. Fourth, we reran the main analysis with both country fixed effects as well as the time trend variable included. As noted above, all the analyses led to the same conclusions with respect to our hypothesis (see online for all regression tables).

4.2.3. Exploratory analysis: Individualism–collectivism as a moderator

We conducted an exploratory analysis of the interaction between individualism–collectivism and economic environment. The tendency to underappreciate contextual influences is greater in individualistic countries (Morris & Peng, 1994; Na et al., 2010; Varnum et al., 2010). Thus, while people in more collectivistic countries might be more alert and responsive to changes in the environment in general, there might not be as much room for them to revise the particular belief that

Table 1
Study 1: Variable summaries and correlation.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Attribution of Responsibility	6.80	2.77									
2. Sense of Control	7.08	2.24	0.08								
3. Male	0.49	0.50	0.02	0.02							
4. Age	42.03	16.34	0.01	-0.03	0.01						
5. Income Level	4.80	2.30	0.01	0.16	0.03	-0.09					
6. Respondent Working	0.68	0.47	0.00	0.04	-0.03	-0.19	0.15				
7. Education Level	4.75	2.20	0.00	0.09	0.03	-0.19	0.31	0.07			
8. Subjective Social Class	2.71	0.97	0.04	0.13	0.00	-0.02	0.45	0.08	0.34		
9. Individualism	0.33	0.16	-0.04	0.04	-0.01	0.18	0.09	-0.06	0.13	0.08	
10. GDP Change (%)	2.96	3.33	0.06	0.01	0.01	-0.07	0.02	0.05	-0.05	0.00	-0.22

Note. $N = 124,400$. Correlations of $|0.01|$ or higher are significant at $p < 0.05$.

Table 2
Study 1: Regression analyses results.

	Model 1: Sense of control			Model 2: Attribution of responsibility			Model 3: Attribution of responsibility		
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Constant	7.08	0.01	0.000	6.80	0.01	0.000	6.78	0.01	0.000
Male	0.04	0.01	0.000	0.06	0.01	0.000	0.06	0.01	0.000
Age	-0.04	0.01	0.000	0.05	0.01	0.000	0.05	0.01	0.000
Income Level	0.26	0.01	0.000	-0.06	0.01	0.000	-0.03	0.01	0.001
Respondent Working	0.04	0.01	0.000	-0.01	0.01	0.087	-0.01	0.01	0.421
Education Level	0.06	0.01	0.000	-0.02	0.01	0.045	-0.01	0.01	0.143
Subjective Social Class	0.15	0.01	0.000	0.14	0.01	0.000	0.16	0.01	0.000
Individualism (A)	0.07	0.01	0.000	-0.10	0.01	0.000	-0.15	0.01	0.000
GDP Change (B)	0.04	0.01	0.000	0.14	0.01	0.000	0.19	0.01	0.000
Sense of Control				0.22	0.01	0.000			
A × B							0.07	0.01	0.000
R ²			0.033			0.013			0.009

Note. *N* = 124,400. All models are estimated using OLS regression with robust standard errors. Predictor variables are standardized and criterion variables are on the original scale.

contextual influences matter for success, as they are already cognizant of the importance of such influences. As displayed in Table 2 (Model 3), the interaction between individualism–collectivism and GDP was significant. We examined conditional effects of GDP on attributions of responsibility at low versus high levels of individualism versus collectivism, and we found that the effect was stronger in more individualistic (1 *SD* above the mean), $b = 0.26$, $SE = 0.01$, $p < 0.001$ than in more collectivistic (1 *SD* below the mean) countries, $b = 0.12$, $SE = 0.01$, $p < 0.001$.

5. Study 2: First experiment among employees

Study 2 was an experiment among a sample of employees from various firms located in the U.S. We constructed highly standardized articles describing the state of the U.S. economy as either more or less prosperous, which were used to manipulate participants' perception of the state of the macroeconomic environment. Next, we measured participants' generalized sense of control, presented them with descriptions of work outcomes, and asked them to what extent the person who performed the work was responsible for the outcome described and whether they would promote or demote that person based on what they read.

In addition to measuring attributions of responsibility for work outcomes, in Studies 2 and 3 we asked participants to make promotion and demotion recommendations based on the work described. The goal of asking for these recommendations was to demonstrate that the different levels of attributed responsibility for work outcomes as a function of the macroeconomic environment translate into consequential workplace decisions. Promotion and demotion decisions are among the most important determinants of employee satisfaction and organizational commitment (Schwarzwald, Koslowsky, & Shalit, 1992), in turn shaping various critical workplace outcomes, from job motivation to counterproductive work behaviors (Cohen-Charash & Spector, 2001).

Studies 2 and 3 were also designed to exclude one alternative account. Our theory suggests that even when facing a situation that is objectively the same (e.g., a medical treatment that resulted in a favorable outcome for the patient), people will understand the situation

differently depending on their perception about the state of the macroeconomic environment and the associated differences in their generalized sense of control. An alternative account is that the power of the environment does truly shift with macroeconomic conditions so that the attributions people make simply describe the actual change in the extent to which the environment contributed to the outcome. For example, when evaluating why a stock investment resulted in unfavorable returns during less prosperous times, people might be relatively correct in assuming that contextual factors (a declining economy) played a greater role in the outcome (poor stock returns).

We sought to exclude this alternative account in two ways. First, we focused on situations in which the work outcomes that participants evaluated did not depend on macroeconomic conditions, such as outcomes of a medical treatment or whether an audience liked a presentation. In addition, we also manipulated whether the work outcomes participants evaluated were favorable or unfavorable. If participants exposed to cues of *less* (compared to more) prosperous economic environments merely accurately described changes in the contribution of the environment to a *favorable* work outcome, they should report that the environment contributed *less* to this outcome (as a less prosperous economic environment facilitates unfavorable rather than favorable work outcomes). Our theory predicts the opposite—because less (compared to more) prosperous economic environments decrease a generalized sense of control, people should report that the environment contributed *more* to the favorable work outcome. Similarly, if participants exposed to cues of *more* (compared to less) prosperous economic environments accurately described changes in the contribution of the environment to an *unfavorable* outcome at work, they should report that the environment contributed *less* to this outcome (as the environment would facilitate favorable rather than unfavorable outcomes). Our theory again leads to the opposite prediction. Taken together, in the context of the design outlined above, which we employ in Studies 2 and 3, our theory leads to the predictions depicted in Fig. 1 and summarized formally as follows:

Hypothesis 2. Perception that the economy is more (versus less) prosperous leads to more promotion (demotion) decisions in response

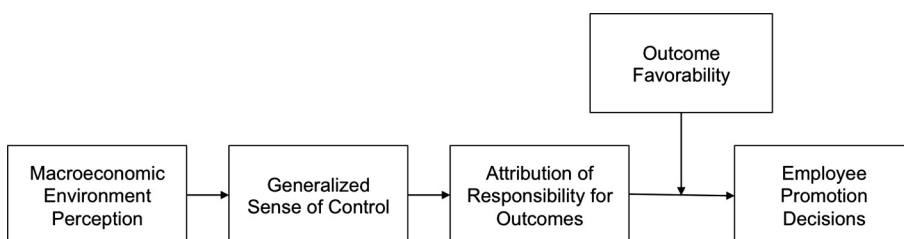


Fig. 1. Predictions tested in Studies 2–3.

to favorable (unfavorable) outcomes of work, and this effect is explained by an increase in a generalized sense of control, and, in turn, attributions of responsibility for work outcomes to individuals.

5.1. Participants and design

The sample consisted of 313 employees ($M_{\text{age}} = 44.21$, $SD_{\text{age}} = 11.46$; 52.72% men) recruited through Clear Voice Research, a U.S.-based market research firm, the panels of which are screened through a strict employment verification process. In both this and Study 3, the target sample size was 300 and the recruiting company hired slightly more participants than requested. Participants had 22.73 years of work experience on average ($SD = 11.41$) and worked in the current organization for the past 10.73 years on average ($SD = 8.65$). Participants came from various industries, most notably health care and social assistance (13.10%), professional, scientific, or technical services (10.22%), educational services (9.58%), manufacturing (8.63%), and finance and insurance (6.71%). Average size of participants' organizations was in the 1501–1600 range. On average, participants had 2.80 organizational levels below ($SD = 4.50$) and 4.99 above them ($SD = 5.61$). We randomly assigned participants to the conditions of a 2 (macroeconomic environment: more versus less prosperous; between-subjects) \times 2 (outcome favorability: favorable versus unfavorable; between-subjects) \times 2 (scenario: medical treatment versus client presentation; within-subjects) design.

5.2. Procedure and materials

5.2.1. Macroeconomic environment perception manipulation

After reporting demographic information, participants were asked to read an article that purportedly described the actual state of the U.S. economy. In reality, the article depicted the economy as either more or less prosperous. The articles were inspired by manipulations of the availability of resources in the environment used in prior research (Griskevicius et al., 2013; Hill et al., 2012). We used a less prosperous period as the natural control condition, since in most cases the economy either waxes or wanes. The articles were standardized in terms of length (498 versus 493 words) and used a nearly identical structure, wording, and style to describe the state of the economy. Each article highlighted actual facts about the U.S. economy to minimize risk of suspicion. The Appendix contains the manipulation.

5.2.2. Manipulation check

To check the effectiveness of the macroeconomic environment manipulation, participants responded to the three items measuring their perception of the macroeconomic environment. Specifically, we asked participants to indicate on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) to what extent they agreed with the following statements: “the state of the economy is bad,” “the economy is in a downturn,” and “an economic recession is likely.” ($\alpha = 0.93$). The items were reverse coded, such that higher scores indicate a lower perception of economic problems, i.e., a perception that the economy is more prosperous.

5.2.3. Generalized sense of control measure

We used a seven-item measure adapted from Mirowsky and Ross (1991), among the most widely used measures of sense of control. We adjusted the wording to measure generalized sense of control, in line with our theoretical focus on individuals' theory about the power of individuals versus contextual influences in bringing about desired outcomes in the world in general. Participants indicated their agreement on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) with statements such as: “People are responsible for their own successes” and “People have little control over the bad things that happen” (reverse coded). The Mirowsky and Ross (1991) scale contains eight

items, but we decided not to include one item that demonstrated poor consistency with the remaining items in our prior experience with this scale ($\alpha = 0.79$).

5.2.4. Work descriptions and outcome favorability manipulation

Next, participants were asked to read two descriptions of work in a random order. In both scenarios, the outcome of work was described as either favorable or unfavorable. Specifically, in the favorable (unfavorable) outcomes condition, participants read as follows:

Medical treatment scenario: Emerson Miller is a doctor who deals with abnormal conditions. Emerson needs to recommend a treatment for a patient. The health issue the patient is dealing with does not have an established treatment method, and the available experimental treatment options are still in the testing phase. Therefore, the outcomes of the treatments are not certain. The treatment Emerson chose for the patient resulted in significant improvement (deterioration) in the patient's condition.

Product presentation scenario: Hayden Clark is a designer who put together a product proposal for a potential new client. When starting work with a new client, there is always some unpredictability in what the client will prefer. Hayden's presentation of the proposal resulted in a new contract with the client (failed attempt and lost opportunity to sign the client).

To ensure the names were gender neutral, we chose names that had a female-to-male ratio close to 1 on the U.S. Social Security Administration's list of popular names (2014).

5.2.5. Attributions of responsibility measure

Next, participants were asked to rate on a scale ranging from 1 (*not at all*) to 5 (*completely*) to what extent the actions taken by each of the employees contributed to the outcomes described.

5.2.6. Promotion (demotion) decisions

Finally, participants in the favorable (unfavorable) outcomes condition were asked whether they would promote (demote) each employee or not (coded 0 for no and 1 for yes).

5.3. Results and discussion

5.3.1. Manipulation check

Participants who read that the economy was less prosperous agreed more strongly that the macroeconomic environment was less prosperous ($M = 3.83$, $SD = 0.88$) than participants who read that the economy was more prosperous ($M = 2.66$, $SD = 1.13$), $t_{311} = 10.12$, $p < 0.001$. Thus, the manipulation of participants' perception of the macroeconomic environment was effective.

5.3.2. Theory test

Fig. 2 contains responses by condition and summaries of the direct effects of the macroeconomic environment manipulation on each measure collected in the study. We note that the manipulation had a direct effect in the expected direction on all measures pertaining to our hypotheses. The order of the presentation of the two scenarios had no main effects or interactions in any of the analyses, so we report the analyses without this factor.

Reading about a more compared to less prosperous economy increased participants' generalized sense of control, $b = 0.26$, $SE = 0.07$, $p = 0.001$ (more prosperous: $M = 3.64$, $SD = 0.61$; less prosperous: $M = 3.37$, $SD = 0.71$). Participants' sense of control was in turn positively related to the extent to which they made internal attributions for work outcomes, $b = 0.24$, $SE = 0.09$, $p = 0.005$. Finally, a logistic regression analysis with clustering at the level of participant (to account for the within-subject factor) found that attribution of responsibility interacted with the outcome favorability manipulation, $b = 2.24$, $SE = 0.36$,

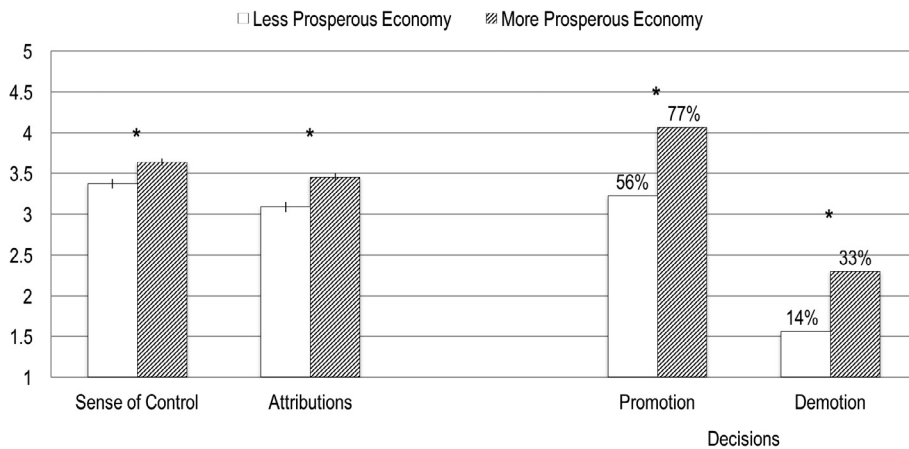


Fig. 2. Study 2: Responses as a function of the macroeconomic environment manipulation. Error bars represent SEs. * $p < 0.05$.

$p < 0.001$, such that a greater attribution of responsibility to the employee was associated with a higher likelihood of recommending a promotion when the outcome turned out to be favorable, $b = 0.25$, $SE = 0.03$, $p < 0.001$, but a higher likelihood of recommending a demotion when the outcome turned out to be unfavorable, $b = -0.14$, $SE = 0.04$, $p = 0.001$.

We tested the significance of the conditional indirect effects of the macroeconomic environment manipulation (0 = less prosperous, 1 = more prosperous) through (1) generalized sense of control, and (2) attributions of responsibility, on promotion and demotion decisions, with outcome favorability as a moderator of the indirect effect in the third stage of the model (see Fig. 1). The same method of testing the significance of the indirect effect was used as in previous studies, with the addition of participant-level clustering to account for the within-subject factor. The analysis found that reading about the more (versus less) prosperous economy made participants more likely to recommend a promotion when the work outcome turned out to be favorable [0.04, 0.22], but more likely to recommend a demotion when the work outcome turned out to be unfavorable [-0.13, -0.02] through an increased generalized sense of control and, in turn, a greater attributed responsibility for the work outcome to the employee. The results support Hypothesis 2.

6. Study 3: Second experiment among employees

In Study 3, we conducted a close replication of Study 2 and we included several additional measures to probe our arguments regarding the reasons why the perception about economic conditions being more versus less prosperous affects generalized sense of control. Our theory is that people notice and experience the greater uncertainty that characterizes less (versus more) prosperous periods, and because of that, update their generalized sense of control that individuals have over outcomes in the world. However, there are additional plausible pathways through which perceptions of changes in the macroeconomic environment might affect generalized sense of control and attributions.

First, it is possible that people's generalized sense of control is affected not just by perceived uncertainty of the economic environment, but also by its perceived fairness. People may attribute a declining economy not just to regular business cycles but also may start to question whether institutions and other powerful economic agents are acting in unfair or corrupt ways, advancing their personal outcomes at the expense of the prosperity of the broader economic system (for example, by engaging in bribery, fraud, and nepotism; The World Bank, 1997). The possibility that people make such attributions is bolstered by a long history of psychological research showing that in perceiving their environment, people are fundamentally attuned not just to issues of efficiency and competence, but also of morality (Wojciszke, 1994, 2005), and concerns related to morality often dominate attention

(Wojciszke, Bazinska, & Jaworski, 1998). If people do perceive the economic system to be fairer during more prosperous economic periods, this could affect their generalized sense of control because a perception that the environment is fair makes people feel more secure and in control of their outcomes (Van den Bos & Lind, 2002). While we thought that perceived fairness of the economic system might potentially be impacted, we also thought that perceived uncertainty is the more likely reason for the effect of macroeconomic environment on generalized sense of control. The reason is that macroeconomic changes are ubiquitous so people are likely to view them as regular byproducts of business activity, rather than exceptional events due to unfair activities.

Second, it is possible that the influence of perceived macroeconomic situations on a generalized sense of control and attributions is due not to specific inferences regarding uncertainty or fairness of the economic system, but more broadly due to a general positivity versus negativity brought about by the economic situation. Less prosperous periods are associated with adversity, so it is possible that exposure to cues of less prosperous economic environments promotes negative mood, which might make people more negative with respect to the influence that people have over outcomes. Negative mood has also been linked with more effortful and analytical thinking (see Schwarz, 1990, for a review), which might make people more attuned to the power of the context. While we deemed it informative to examine a potential role of mood, we again favored the explanation focusing on perceived uncertainty of the economic environment because prior work that experimentally manipulated a perceived state of the economy did not find effects on either positive or negative mood (e.g., Hill et al., 2012). Study 3 thus examined these potential reasons (uncertainty, fairness, and mood) for why perceptions of the macroeconomic environment impacts generalized sense of control and attributions to provide a richer investigation of the underlying psychological process.

6.1. Participants and design

Participants were 305 employees ($M_{age} = 49.87$, $SD_{age} = 11.79$; 56.72% men) recruited through Clear Voice Research. They were randomly assigned to the conditions of a 2 (macroeconomic environment: more versus less prosperous; between-subjects) \times 2 (outcome favorability: favorable versus unfavorable; between-subjects) \times 2 (scenario: medical treatment versus client presentation; within-subjects) design. Participants had 28.34 years of work experience on average ($SD = 12.54$) and worked in the current organization for the past 11.22 years on average ($SD = 8.95$). Participants came from various industries, most notably health care and social assistance (11.48%), professional, scientific, or technical services (8.85%), manufacturing (8.52%), educational services (7.54%), and retail trade (7.54%). Average size of participants' organization was in the 1801–1900 range. On average,

participants had 2.79 organizational levels below ($SD = 4.08$) and 5.22 above them ($SD = 6.21$).

6.2. Procedure and materials

Procedure and materials were the same as in Study 2, except that we also administered measures of perceived uncertainty, perceived fairness, and mood following the economic environment manipulation and the manipulation check ($\alpha = 0.91$), and prior to measuring generalized sense of control ($\alpha = 0.85$), attributions of responsibility, and promotion and demotion decisions.

6.2.1. Perceived environmental uncertainty measure

We constructed a measure of uncertainty drawing on conceptual work by Milliken (1987) and a measure by Rafferty and Griffin (2006). Specifically, we asked participants to indicate on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) to what extent they agreed that the economic context was “uncertain,” “unpredictable,” and “volatile” ($\alpha = 0.86$).

6.2.2. Perceived fairness measure

We constructed this measure drawing on the work on perceived justice by Ambrose and Schminke (2009) and perceived trust in institutions by Devos, Spini, and Schwartz (2002). We asked participants to indicate on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) to what extent they agreed that the economic system was “fair,” “just,” and “trustworthy” ($\alpha = 0.89$).

6.2.3. Mood measure

We next measured mood using the PANAS (Watson, Clark, & Tellegen, 1988). Participants were asked to indicate on a scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*) to what extent ten positive mood states (e.g. enthusiastic, inspired, proud; $\alpha = 0.93$) and ten negative mood states (e.g., scared, nervous, upset; $\alpha = 0.90$) described how they felt.

6.3. Results and discussion

6.3.1. Manipulation check

Participants who read that the economy was less prosperous agreed more strongly that the macroeconomic environment was less prosperous ($M = 3.56$, $SD = 0.98$) than participants who read that the economy was less prosperous ($M = 2.38$, $SD = 1.11$), $t_{303} = 9.80$, $p < 0.001$. Thus, the manipulation of participants’ perception of the macroeconomic environment was effective.

6.3.2. Theory test

Fig. 3 contains responses by condition and summaries of the direct

effects of the macroeconomic environment manipulation on each measure collected in the study. We note that the manipulation had a direct effect in the expected direction on all measures pertaining to our hypotheses. The order of the presentation of the two scenarios had no main effects or interactions in any of the analyses, so we report the analyses without this factor.

Reading about a less versus more prosperous economy decreased participants’ generalized sense of control, $b = 0.38$, $SE = 0.08$, $p < 0.001$ (more prosperous: $M = 3.71$, $SD = 0.69$; less prosperous: $M = 3.32$, $SD = 0.71$). Participants’ generalized sense of control was in turn positively related to the extent to which they made internal attributions for work outcomes, $b = 0.48$, $SE = 0.09$, $p < 0.001$. Finally, a logistic regression analysis with clustering at the level of participant (to account for the within-subject factor) found that attribution of responsibility interacted with outcome favorability, $b = 2.24$, $SE = 0.33$, $p < 0.001$, such that a higher level of attribution of responsibility to the employee was associated with a higher likelihood of recommending a promotion when the outcome turned out to be favorable, $b = 0.18$, $SE = 0.02$, $p < 0.001$, but a higher likelihood of recommending a demotion when the outcome turned out to be unfavorable, $b = -0.16$, $SE = 0.04$, $p < 0.001$.

We next tested the significance of the conditional indirect effects using the same procedure as in Study 2. The analysis found that reading about more (versus less) prosperous economy made participants more likely to recommend a promotion when the work outcome turned out to be favorable [0.15, 0.44], but more likely to recommend a demotion when the work outcome turned out to be unfavorable [-0.44, -0.11] through an increased generalized sense of control and, in turn, a greater attributed responsibility for the work outcome to the employee. The results support Hypothesis 2.

6.3.3. Supplementary analysis: Role of uncertainty, fairness, and mood

The economic environment manipulation had no effects on perceived fairness, positive mood, and negative mood ($ps > 0.106$). In contrast, reading about a more relative to less prosperous economy led to lower perceived uncertainty, $b = -0.68$, $SE = 0.11$, $p < 0.001$ (more prosperous: $M = 3.10$, $SD = 1.10$; less prosperous: $M = 3.78$, $SD = 0.74$), and perceived uncertainty was in turn associated with a lower generalized sense of control, $b = -0.14$, $SE = 0.04$, $p = 0.001$, controlling for perceived fairness, positive mood, and negative mood. Finally, we estimated the same overall moderated mediation model as above (Fig. 1), but we included perceived uncertainty as an additional mediator between the macroeconomic environment manipulation and generalized sense of control, and we controlled for perceived fairness, positive mood, and negative mood in all the paths in which perceived uncertainty was a predictor. Controlling for these factors, perceived uncertainty mediated the effect of the macroeconomic environment manipulation on promotion and demotion decisions through

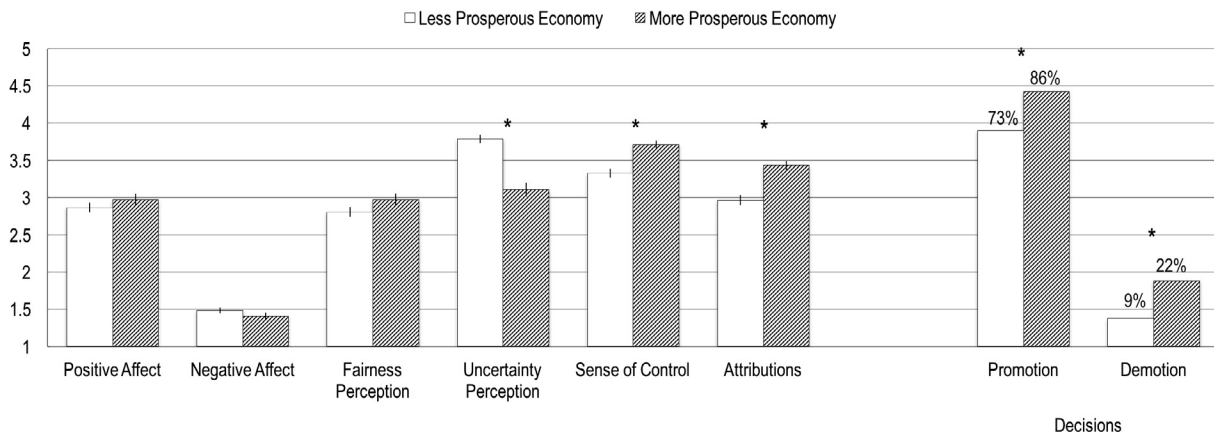


Fig. 3. Study 3: Responses as a function of the macroeconomic environment manipulation. Error bars represent SEs. * $p < 0.05$.

generalized sense of control and attributions (favorable outcome CI: 0.01, 0.10, unfavorable outcome CI: -0.10, -0.12). These results provide additional support for our theoretical arguments regarding the reasons why the macroeconomic environment impacts generalized sense of control, and in turn shapes attributions and promotion and demotion decisions.

7. General discussion

One correlational and two experimental studies found that when the macroeconomic environment is perceived to be more (less) prosperous, people's generalized sense of control increases (decreases), leading them to attribute more (less) responsibility for work outcomes to individuals rather than contextual influences. Study 1 found, in a sample of 124,400 respondents surveyed across 57 countries and 19 years, that more prosperous periods were associated with a higher generalized sense of control, which in turn made people less likely to believe contextual influences matter for work success. Study 2 used a sample of U.S. employees and found that those employees who were made to believe that the U.S. economy was more (less) prosperous reported a higher generalized sense of control, and in turn attributed greater responsibility for work outcomes to employees. The greater attributed responsibility increased the likelihood of promotion (demotion) decisions when the work outcome was favorable (unfavorable). Finally, Study 3 replicated Study 2 and provided evidence that the macroeconomic environment affects generalized sense of control by impacting perceived uncertainty of the economic environment.

7.1. Implications for work evaluations research and practice

Assessing work quality is fundamental to successful organizational functioning. Organizations have an interest in hiring and promoting people based on good work. Yet, doing so is often not straightforward. Bad work sometimes results in good outcomes and good work in bad outcomes. For most jobs, the quality of work is somewhat disconnected from work outcomes, as contextual influences such as chance affect end results. Much research suggests that people underappreciate contextual influences, leading to biased evaluations of work, and consequently, to inefficient and unfair selection and promotion decisions. Our work contributes to the literature on work evaluations by identifying one broad and hitherto overlooked factor—the perceived state of the economic environment—that affects people's psychology on an everyday basis, aggravating the tendency to neglect contextual influences on work outcomes during more prosperous times and alleviating this tendency during less prosperous times.

As such, our results point to ways in which organizations can devise targeted efforts to improve the quality of work evaluations. Our findings can be added to business school sessions on biases in employee evaluations. By being more cognizant of the greater tendency to attribute responsibility for work outcomes to individuals during prosperous times, managers might attempt to detect and temper this trend in their own work evaluations, and might also more readily recognize and correct it in others. Managers could be trained to implement techniques for reducing bias in social judgment, such as intentionally considering potential alternative influences on employees' work outcomes (Lord, Lepper, & Preston, 1984). Using this technique during more economically prosperous periods might help managers reduce the risk of underappreciating contextual influences in work evaluations.

Organizations could also invest time and resources in implementing greater levels of accountability, or expectations that one may be called to justify one's decisions, during times of prosperity. Managers could be asked to justify their work evaluations and related personnel decisions to superiors, or even to employees themselves. Research has shown that accountability makes people more accurate in their attributions (Tetlock, 1985) because the expectation that one might be called to justify one's decision promotes more thorough processing and

preemptive self-criticism. Organizations might thus mitigate the relatively greater risk of underappreciating contextual influences in work evaluations during more prosperous periods by mandating that managers provide justifications for their work evaluations.

7.2. Implications for broader organizational science

A more general contribution of our work is that it highlights the relevance of considering the macroeconomic environment for understanding individual-level psychology and decisions at work. We believe it is unrealistic to study individual decision making in organizations by assuming employee psychology is unaffected by the broader economic context (Oishi & Graham, 2010). Historical accounts as well as newspaper stories about describing how people change the way they act when they perceive the economy to be in an economic boom versus undergoing a recession. For example, bank runs are sometimes said to be an individual-level response to economic crisis that further fuels the crisis that initiated it. Less is known about the consequences macroeconomic changes have for employees in organizations, who are important economic agents. Organizational research has yet to offer a comprehensive, theoretically grounded account of such employee consequences.

Our work points to potentially important consequences macroeconomic changes may have on employees. We find that people's perception that the economic environment is less prosperous lowers their generalized sense of control. One immediate implication of this finding is for employee health and wellbeing, because a large body of work shows that sense of control protects against feelings of hopelessness (Langer, 1975; Seligman, 1975; Taylor, 1989) and is associated with physical health (Rodin, 1986). In addition, employees' sense of control is a necessary prerequisite for personal initiative at work (Parker, Williams, & Turner, 2006). It is therefore possible that recessionary periods, when people have a lower generalized sense of control, make people less willing to display initiative. Given the importance of personal initiative for work performance (Bledow & Frese, 2009), the lower levels of generalized sense of control and personal initiative during more difficult economic periods might be another case of individual responses to cues of economic problems that further perpetuate these same economic problems, paralleling the case of bank runs. Future work is needed to explore this possibility.

A broader finding of our work is that less versus more adverse economic periods shape people's mindset and interpretation of social processes. Times of prosperity are marked by cues of an abundant future and the view that new wealth can be created. During worse economic periods, people might be less likely to construe success at work as something that can be generated anew, and might be more likely to think about success as something that needs to be taken from others. Employees might be more likely to hold a generalized construal of success as a zero-sum good. This might be relevant because many everyday micro-interactions at work depend on people's general view of whether helping others' success is positively or negatively correlated with one's own success. For example, employees may need to make sense of whether helping a colleague is aligned with their self-interest or contrary to it. In such cases, people might be driven by their generalized view that success is scarce, which is arguably more likely to arise during recessions. For this reason, recessionary times might undercut interpersonal helping in organizations. Because a drop in helping behavior would harm the economic success of teams, organizations (Podsakoff, Ahearne, & MacKenzie, 1997), and, by extension, entire economies, lower levels of helping in response to cues of an economic downturn might constitute another pathway through which macro processes shape individual behavior in organizations, which then aggregates back to impact the broader economic context.

7.3. Limitations and future empirical work

The three studies reported here provide overall support for our theory, but at the same time our empirical tests can be extended in terms of the richness of the exploration of the psychological process and boundary conditions. One way in which the current set of studies can be extended is to systematically vary the actual correlation between work quality and work outcomes. In Studies 2 and 3, we focused on situations for which the implied correlation between work quality and work outcomes was relatively weak. As we argued at the outset of the paper, most work is marked by an imperfect correlation between work quality and work outcomes, so the effect we document likely operates across many jobs. Nevertheless, future work could test whether providing more extensive information about work quality (e.g., a comparison of work procedures with a benchmark) weakens the extent to which people rely on their generalized sense of control when attributing responsibility for work outcomes. The effect we document should be most pronounced with respect to more complex work for which work quality is more difficult to observe and the disconnect between work quality and work outcomes is significant. A related question is whether work quality is inherently less strongly correlated with work outcomes during less prosperous periods and thus whether the effect of generalized sense of control on attributions might be stronger in less prosperous economic environments. The stronger relationship between generalized sense of control and attributions during less prosperous times would be a contributing factor to the effect we document because it would amplify the differences in attributions (that are due to differences in generalized sense of control) as a function of the macroeconomic situation. We explored this possibility empirically using data from our three studies and testing the interaction between generalized sense of control and the macroeconomic environment in predicting attributions. We conducted a random-effects *meta*-analysis (Schmidt, Oh, & Hayes, 2009), and found no significant interaction effect, CI: $-0.49, 0.06$. One possible reason is that the kinds of work outcomes we examined in our studies are less directly dependent on the state of the macroeconomic environment (e.g., the outcome of a medical treatment is not actually more uncertain during less prosperous economic periods). However, for some jobs, such as financial investing, the state of the economy does impact the likelihood of reaching desired outcomes. Future studies varying the type of work outcomes examined (some more, some less directly dependent on macroeconomic influences), might thus provide a

richer description of the conditions that affect the strength of the effect we document.

Another way in which the current set of studies can be extended is through more robust tests of the mediating process. We proposed that the perceived state of the macroeconomic environment affects the generalized sense of control, which in turn affects attributions. However, a reverse causal order cannot be excluded based on our data. The primary reason we favor the proposed order of effects rather than a reverse order is theoretical. As detailed in the theory section, we have strong theoretical reasons to believe that the perceived macroeconomic environment would affect generalized sense of control; we had little theoretical basis to expect that the prosperity of the economy would shape attributions directly, without an intervening psychological process. Additionally, in our Studies 2 and 3, participants reported their generalized sense of control before reading about work outcomes and being asked to attribute responsibility to the individual who performed the work. It is unlikely that an attribution that was not yet made affected participants' generalized sense of control. However, it is not logically impossible that a reverse, or even reciprocal, process occurs such that the macroeconomic environment shapes attributions, which in turn shape sense of control, or perhaps the macroeconomic environment affects both simultaneously and the two in turn mutually reinforce each other. Thus, more nuanced tests of the mediating process are needed, most notably using manipulations of the psychological process (Spencer, Zanna, & Fong, 2005).

8. Conclusion

Across three studies, we found that the macroeconomic environment shapes people's psychology underlying an essential organizational function: work evaluations and the associated promotion decisions. This research provides a novel explanation for when and why people attribute work outcomes to individuals versus contextual influences and, as such, points to ways of improving decision-making in organizations. More broadly, our work shows that taking into account how people change their behavior in response to broader economic trends has the potential to generate richer and better models of organizational behavior. We hope that our theoretical and methodological approach informs organizational scholars to broaden their focus and create a better understanding of employee behavior by taking into account a constantly changing economic environment.

A: Articles describing more (Left) versus less (Right) prosperous Macroeconomic situation

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Economic Forecast 2016-2018

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Five months ago Michael Lowe earned his college degree. Michael was doing well at age 23. He was on the brink of his new adult life. Today he is sitting in the lavish foyer of a Chicago based hedge fund. "I didn't dare to hope this would happen to me," he says with a smile. "I earned a college degree and immediately got a job interview. During my studies I had feared this would not be possible due to what was then a poor economic situation."

This reassuring story is not unique. Economists and business people agree that the seven-year-long recessionary period has ended and that the US economy is healthier than it has been in a long time. Unemployment lines are all but gone. "American people are working again," notes Mark Henderson, the head of the U.S. Economic Commission. The share of prime-age men and women who are working has more than tripled since 2009. The United States, which had one of the highest employment rates among developed nations as recently as 1990, managed to regain this status; 2015 was best for job growth since 1999.

What reasons are there for such bright economic reality? Perhaps the most important one is the fact that America has regained the ability to compete in the global economy. America's competitiveness is primarily boosted by high-quality labor, strong education system and efficient corporate taxes. Although wages in the US are higher than those in emerging economies such as China and Brazil, American workers are drastically more skilled and able to generate greater business value, resulting in American economic domination in such highly profitable sectors as high-tech, healthcare, and financial services. In addition, while the media is quick to point out minor imperfections in the US tax code, the US still has one of the lowest and most efficient corporate taxes that attract companies and, consequently, generate jobs at home. In fact, the US has the highest number of deductions available to corporations among all industrialized nations (OECD countries).

Many economists agree that the current promising economic perspective is likely to last. Mark Henderson notes that job creation recently rapidly increased, the U.S. stock market is heavily outperforming most emerging economies and most net new jobs being created are in highly profitable industries, further helping American global competitiveness. In fact, there has been a lot of talk about an even stronger economic growth being on its way. The Gene Fuller Forecasting Center, based in Mount Kisco, New York report that they see a astounding 75% chance of economic expansion of 5% or above in 2016. "Clearly the direction of most of the recent global economic news suggests movement toward a 2016 expansion," chairman Gene Fuller told clients in an Oct. 23 2015 edition of a monthly forecasting report. Seeing as the Gene Fuller Forecasting Center correctly predicted that the recession was imminent in October 2007 (it began two months later), their optimistic predictions for 2016 bear weight and sound very encouraging.

Forbes

Jack Mullighan (<http://www.forbes.com/sites/jackmullighan/>)
Contributor I connect the dots between the economy and business decisions. Opinions expressed by Forbes Contributors are their own.

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Five months ago Michael Lowe earned his college degree. Michael was doing well at age 23. He was on the brink of his new adult life. Today, however, Michael is standing in a dreary unemployment line downtown. "I didn't think this could happen to me," he mutters while shaking his head. "I have a college degree and I can't even get a job interview, let alone a job. I just don't know where the money is going to come from."

This depressing story is not unique. Although there has been a lot of talk about recovery from the seven-year-long recessionary period, many economists now believe that hard times are yet to come. Unemployment lines are still horrifying. "Working, in America, is in decline," notes Mark Henderson, the head of the U.S. Economic Commission. The share of prime-age men and women who are not working has more than tripled since the late 1960s, to 16 percent. The United States, which had one of the highest employment rates among developed nations as recently as 1990, has fallen toward the bottom of the list.

What reasons are there for such gloomy economic reality? Perhaps the most important one is the fact that America has lost the ability to compete in the global economy. America's competitiveness is primarily hindered by high labor costs, weak education system and crippling corporate taxes. American workers' wages are drastically higher than those in emerging economies such as China and Brazil. At the same time, these countries are overtaking the US in terms of the quality of education, so American workers are no longer able to generate greater business value, resulting in American economic inferiority in such once-profitable sectors as manufacturing, auto industry, and real estate. The problem is compounded by high and convoluted corporate taxes that push companies and, consequently, jobs, abroad. In fact, the US has the single highest corporate tax rate among all industrialized nations (OECD countries).

Many economists agree that the current dismal economic perspective is the result of a long-term trend that is likely to continue. Mark Henderson notes that job creation had stalled around 2000, the U.S. stock market was heavily outperformed by most emerging economies and most net new jobs being created are in local government and low-paying positions, in no way helping American global competitiveness. In fact, there has been a lot of talk about the next recession being on its way. The Gene Fuller Forecasting Center, based in Mount Kisco, New York report that they see a staggering 75% chance of another difficult recession commencing in 2016. "Clearly the direction of most of the recent global economic news suggests movement toward a 2016 downturn," chairman Gene Fuller told clients in an Oct. 23 2015 edition of a monthly forecasting report. Seeing as the Gene Fuller Forecasting Center correctly predicted that the recession was imminent in October 2007 (it began two months later), their gray predictions for 2016 bear weight and sound very worrying.

References

- Aktas, M., Gelfand, M. J., & Hanges, P. J. (2016). Cultural tightness-looseness and perceptions of effective leadership. *Journal of Cross-Cultural Psychology*, 47(2), 294-309. <http://dx.doi.org/10.1177/0022022115606802>.
- Ambrose, M. L., & Schminke, M. (2009). The role of overall justice judgments in organizational justice research: A test of mediation. *Journal of Applied Psychology*, 94(2), 491-500. <http://dx.doi.org/10.1037/a0013203>.
- Anderson, J. C., Jennings, M. M., Lowe, D. J., & Reckers, P. M. (1997). The mitigation of hindsight bias in judges' evaluation of auditor decisions. *Auditing: A Journal of Practice & Theory*, 16(2), 20-39.
- Arvey, R. D., & Murphy, K. R. (1998). Performance evaluation in work settings. *Annual Review of Psychology*, 49(1), 141-168. <http://dx.doi.org/10.1146/annurev.psych.49.1.141>.
- Baldwin, M. W. (1992). Relational schemas and the processing of social information. *Psychological Bulletin*, 112(3), 461-484. <http://dx.doi.org/10.1037/0033-2909.112.3.461>.
- Bamberger, P. (2008). From the editors beyond contextualization: Using context theories to narrow the micro-macro gap in management research. *Academy of Management Journal*, 51(5), 839-846. <http://dx.doi.org/10.5465/AMJ.2008.34789630>.
- Baron, J., & Hershey, J. C. (1988). Outcome bias in decision evaluation. *Journal of Personality and Social Psychology*, 54(4), 569-579. <http://dx.doi.org/10.1037/0022-3514.54.4.569>.
- Bianchi, E. C. (2013). The bright side of bad times: The affective advantages of entering the workforce in a recession. *Administrative Science Quarterly*, 58(4), 587-623. <http://dx.doi.org/10.1177/0001839213509590>.
- Bianchi, E. C. (2016). American individualism rises and falls with the economy: Cross-temporal evidence that individualism declines when the economy falters. *Journal of Personality and Social Psychology*, 111(4), 567-584. <http://dx.doi.org/10.1037/pspp0000114>.
- Bledow, R., & Frese, M. (2009). A situational judgment test of personal initiative and its relationship to performance. *Personnel Psychology*, 62(2), 229-258. <http://dx.doi.org/10.1111/j.1744-6570.2009.01137.x>.
- Braun, M., & Müller, W. (1997). Measurement of education in comparative research. *Comparative Social Research*, 16, 163-202.
- Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes*, 86(2), 278-321. <http://dx.doi.org/10.1006/obhd.2001.2958>.
- Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology*, 92(4), 909-927. <http://dx.doi.org/10.1037/0021-9010.92.4.909>.
- Cronbach, L. J. (1955). Processes affecting scores on "understanding of others" and "assumed similarity". *Psychological Bulletin*, 52(3), 177-193. <http://dx.doi.org/10.1037/h0044919>.
- Denrell, J., & Fang, C. (2010). Predicting the next big thing: Success as a signal of poor judgment. *Management Science*, 56(10), 1653-1667. <http://dx.doi.org/10.1287/mnsc.1100.1220>.
- Denrell, J., & Liu, C. (2012). Top performers are not the most impressive when extreme performance indicates unreliability. *Proceedings of the National Academy of Sciences*, 109(24), 9331-9336. <http://dx.doi.org/10.1073/pnas.1116048109/-/DCSupplemental>.
- Devos, T., Spini, D., & Schwartz, S. H. (2002). Conflicts among human values and trust in institutions. *British Journal of Social Psychology*, 41(4), 481-494. <http://dx.doi.org/10.1348/014466602321149849>.
- European Values Study (2015). Longitudinal Data File 1981-2008. Retrieved from <http://www.europeanvaluesstudy.eu/>.
- European Values Survey (2017). Surveys. Retrieved from <http://www.europeanvaluesstudy.eu/page/methods-and-sample-survey-2008.html>.
- Feather, N. T. (1969). Attribution of responsibility and valence of success and failure in relation to initial confidence and task performance. *Journal of Personality and Social Psychology*, 13(2), 129-144. <http://dx.doi.org/10.1037/h0028071>.
- Feather, N. T., & Simon, J. (1971). Attribution of responsibility and valence of outcome in relation to initial confidence and success and failure of self and other. *Journal of Personality and Social Psychology*, 18(2), 173-188. <http://dx.doi.org/10.1037/h0030845>.
- Feather, N. T., & Simon, J. (1972). Luck and the unexpected outcome: A field replication of laboratory findings. *Australian Journal of Psychology*, 24(1), 113-117. <http://dx.doi.org/10.1080/00049537208255794>.
- Feather, N. T., & Simon, J. (1975). Reactions to male and female success and failure in sex-linked occupations: Impressions of personality, causal attributions, and perceived

- likelihood of different consequences. *Journal of Personality and Social Psychology*, 31(1), 20–31. <http://dx.doi.org/10.1037/h0076240>.
- Fiske, S. T. (1992). Thinking is for doing: Portraits of social cognition from Daguerreotype to laserphoto. *Journal of Personality and Social Psychology*, 63(6), 877–889. <http://dx.doi.org/10.1037/0022-3514.63.6.877>.
- Folkman, S. (1984). Personal control and stress and coping processes: A theoretical analysis. *Journal of Personality and Social Psychology*, 46(4), 839–852. <http://dx.doi.org/10.1037/0022-3514.46.4.839>.
- Forgas, J. P. (1998). On being happy and mistaken: Mood effects on the fundamental attribution error. *Journal of Personality and Social Psychology*, 75(2), 318–331. <http://dx.doi.org/10.1037/0022-3514.75.2.318>.
- Garland, H., & Price, K. H. (1977). Attitudes toward women in management and attributions for their success and failure in a managerial position. *Journal of Applied Psychology*, 62(1), 29–33. <http://dx.doi.org/10.1037/0021-9010.62.1.29>.
- Gilbert, D. T., & Malone, P. S. (1995). The correspondence bias. *Psychological Bulletin*, 117(1), 21–38. <http://dx.doi.org/10.1037/0033-2909.117.1.21>.
- Goldsmith, A. H., Veum, J. R., & Darity, W. (1996). The psychological impact of unemployment and joblessness. *Journal of Socio-Economics*, 25(3), 333–358. [http://dx.doi.org/10.1016/S1053-5357\(96\)90009-8](http://dx.doi.org/10.1016/S1053-5357(96)90009-8).
- Griskevicius, V., Ackerman, J. M., Cantù, S. M., Delton, A. W., Robertson, T. E., Simpson, J. A., & Tybur, J. M. (2013). When the economy falters, do people spend or save? Responses to resource scarcity depend on childhood environments. *Psychological Science*, 0956797612451471. <http://dx.doi.org/10.1177/0956797612451471>.
- Grossmann, I., & Varnum, M. E. (2010). Social class, culture, and cognition. *Social Psychological and Personality Science*, 2, 81–89. <http://dx.doi.org/10.1177/1948550610377119>.
- Hill, S. E., Rodeheffer, C. D., Griskevicius, V., Durante, K., & White, A. E. (2012). Boosting beauty in an economic decline: Mating, spending, and the lipstick effect. *Journal of Personality and Social Psychology*, 103(2), 275–291. <http://dx.doi.org/10.1037/a0028657>.
- Hofstede, G. H. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. London, UK: Sage.
- House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies*. Thousand Oaks, California: Sage.
- Hunter, J. E., Schmidt, F. L., & Judiesch, M. K. (1990). Individual differences in output variability as a function of job complexity. *Journal of Applied Psychology*, 75(1), 28–42. <http://dx.doi.org/10.1037/0021-9010.75.1.28>.
- Integrated Values Surveys (2015). Integrated values surveys 1981–2014. Retrieved from <http://www.europeanvaluesstudy.eu/page/integrated-values-surveys-1981-2008.html>.
- Jamison, R. N., Lewis, S., & Burish, T. G. (1986). Psychological impact of cancer on adolescents: Self-image, locus of control, perception of illness and knowledge of cancer. *Journal of Chronic Diseases*, 39(8), 609–617. [http://dx.doi.org/10.1016/0021-9681\(86\)90186-4](http://dx.doi.org/10.1016/0021-9681(86)90186-4).
- Jones, E. E., & Nisbett, R. E. (1972). The actor and the observer: Divergent perceptions of the causes of behavior. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the Causes of Behavior* (pp. 79–94). City, New Jersey: General Learning Press.
- Keltner, D., Ellsworth, P. C., & Edwards, K. (1993). Beyond simple pessimism: Effects of sadness and anger on social perception. *Journal of Personality and Social Psychology*, 64(5), 740–752. <http://dx.doi.org/10.1037/0022-3514.64.5.740>.
- Kittilson, M. C. (2007). Research resources in comparative political behavior. In Russel J. Dalton, & H.-D. Klingemann (Eds.), *Oxford handbook of political behavior* (pp. 865–895). Oxford University Press.
- Kluegel, J. R., & Smith, E. R. (1986). *Beliefs about Inequality: Americans' Views of What Is and What Ought To Be*. New York, NY: Aldine de Gruyter.
- Kraus, M. W., Piff, P. K., & Keltner, D. (2009). Social class, sense of control, and social explanation. *Journal of Personality and Social Psychology*, 97(6), 992–1004. <http://dx.doi.org/10.1037/a0016357>.
- Lachman, M. E., & Weaver, S. L. (1998). The sense of control as a moderator of social class differences in health and well-being. *Journal of Personality and Social Psychology*, 74(3), 763–773. <http://dx.doi.org/10.1037/0022-3514.74.3.763>.
- Langer, E. J. (1975). The illusion of control. *Journal of Personality and Social Psychology*, 32(2), 311–328. <http://dx.doi.org/10.1037/0022-3514.32.2.311>.
- Lord, C. G. (1982). Predicting behavioral consistency from an individual's perception of situational similarities. *Journal of Personality and Social Psychology*, 42(6), 1076–1088. <http://dx.doi.org/10.1037/0022-3514.42.6.1076>.
- Lord, C. G., Lepper, M. R., & Preston, E. (1984). Considering the opposite: A corrective strategy for social judgment. *Journal of Personality and Social Psychology*, 47(6), 1231–1243. <http://dx.doi.org/10.1037/0022-3514.47.6.1231>.
- Maleki, A., & Hendriks, F. (2015). Grid, group, and grade challenges in operationalizing cultural theory for cross-national research. *Cross-Cultural Research*, 49(3), 250–280. <http://dx.doi.org/10.1177/1069397114555843>.
- Malle, B. F. (1999). How people explain behavior: A new theoretical framework. *Personality and Social Psychology Review*, 3(1), 23–48. http://dx.doi.org/10.1207/s15327957pspr0301_2.
- Meindl, J. R., Ehrlich, S. B., & Dukerich, J. M. (1985). The romance of leadership. *Administrative Science Quarterly*, 30(1), 78–102. <http://dx.doi.org/10.2307/2392813>.
- Miller, J. G. (1984). Culture and the development of everyday social explanation. *Journal of Personality and Social Psychology*, 46(5), 961–978. <http://dx.doi.org/10.1037/0022-3514.46.5.961>.
- Miller, D. T., & Ross, M. (1975). Self-serving biases in the attribution of causality: Fact or fiction? *Psychological Bulletin*, 82(2), 213–225. <http://dx.doi.org/10.1037/h0076486>.
- Milliken, F. J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *Academy of Management Review*, 12(1), 133–143. <http://dx.doi.org/10.5465/AMR.1987.4306502>.
- Mirowsky, J. (1995). Age and the sense of control. *Social Psychology Quarterly*, 58(1), 31–43. <http://dx.doi.org/10.2307/2787141>.
- Mirowsky, J., & Ross, C. E. (1991). Eliminating defense and agreement bias from measures of the sense of control: A 2 × 2 index. *Social Psychology Quarterly*, 54(2), 127–145. <http://dx.doi.org/10.2307/2786931>.
- Mishel, L., & Sabadish, N. (2013). CEO pay in 2012 was extraordinarily high relative to typical workers and other high earners. Retrieved from <http://www.epi.org/publication/ceo-pay-2012-extraordinarily-high/>.
- Mittal, C., & Griskevicius, V. (2014). Sense of control under uncertainty depends on people's childhood environment: A life history theory approach. *Journal of Personality and Social Psychology*, 107(7), 621–637. <http://dx.doi.org/10.1037/a0037398>.
- Morris, M. W., & Peng, K. (1994). Culture and cause: American and Chinese attributions for social and physical events. *Journal of Personality and Social Psychology*, 67(6), 949–971. <http://dx.doi.org/10.1037/0022-3514.67.6.949>.
- Na, J., Grossmann, I., Varnum, M. E., Kitayama, S., Gonzalez, R., & Nisbett, R. E. (2010). Cultural differences are not always reducible to individual differences. *Proceedings of the National Academy of Sciences*, 107(14), 6192–6197.
- National Bureau of Economic Research (2011). US business cycle expansions and contractions Retrieved from <http://www.nber.org/cycles.html>.
- National Bureau of Economic Research (2015). The NBER's business cycle dating procedure: Frequently asked questions. Retrieved from http://www.nber.org/cycles/recessions_faq.html.
- Niedenthal, P. M., Cantor, N., & Kihlstrom, J. F. (1985). Prototype matching: A strategy for social decision making. *Journal of Personality and Social Psychology*, 48(3), 575–584. <http://dx.doi.org/10.1037/0022-3514.48.3.575>.
- Nowicki, S., Jr., & Duke, M. P. (1974). A locus of control scale for noncollege as well as college adults. *Journal of Personality Assessment*, 38(2), 136–137. <http://dx.doi.org/10.1080/00223891.1974.10119950>.
- Oishi, S., & Graham, J. (2010). Social ecology lost and found in psychological science. *Perspectives on Psychological Science*, 5(4), 356–377. <http://dx.doi.org/10.1177/1745691610374588>.
- Parker, S. K., Williams, H. M., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology*, 91(3), 636–652. <http://dx.doi.org/10.1037/0021-9010.91.3.636>.
- Podsakoff, P. M., Ahearne, M., & MacKenzie, S. B. (1997). Organizational citizenship behavior and the quantity and quality of work group performance. *Journal of Applied Psychology*, 82(2), 262–270. <http://dx.doi.org/10.1037/0021-9010.82.2.262>.
- Rafferty, A. E., & Griffin, M. A. (2006). Perceptions of organizational change: A stress and coping perspective. *Journal of Applied Psychology*, 91(5), 1154–1162. <http://dx.doi.org/10.1037/0021-9010.91.5.1154>.
- Rodin, J. (1986). Aging and health: Effects of the sense of control. *Science*, 233(4770), 1271–1276. <http://dx.doi.org/10.1126/science.3749877>.
- Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. *Advances in Experimental Social Psychology*, 10, 173–220. [http://dx.doi.org/10.1016/S0065-2601\(08\)60357-3](http://dx.doi.org/10.1016/S0065-2601(08)60357-3).
- Ross, L., Greene, D., & House, P. (1977). The “false consensus effect”: An egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology*, 13(3), 279–301. [http://dx.doi.org/10.1016/0022-1031\(77\)90049-X](http://dx.doi.org/10.1016/0022-1031(77)90049-X).
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80(1), 1–28. <http://dx.doi.org/10.1037/h0092976>.
- Rotter, J. B. (1971). Generalized expectancies for interpersonal trust. *American Psychologist*, 26(5), 443–452. <http://dx.doi.org/10.1037/h0031464>.
- Schmidt, F. L., Oh, I. S., & Hayes, T. L. (2009). Fixed-versus random-effects models in meta-analysis: Model properties and an empirical comparison of differences in results. *British Journal of Mathematical and Statistical Psychology*, 62(1), 97–128. <http://dx.doi.org/10.1348/000711007x255327>.
- Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In R. M. Sorrentino, & E. T. Higgins (Vol. Eds.), *Handbook of motivation and cognition: Foundations of social behavior: Vol. 2*, (pp. 527–561). New York, NY: Guilford Press.
- Schwarzwald, J., Koslowsky, M., & Shalit, B. (1992). A field study of employees' attitudes and behaviors after promotion decisions. *Journal of Applied Psychology*, 77(4), 511–514. <http://dx.doi.org/10.1037/0021-9010.77.4.511>.
- Seligman, M. E. (1975). *Helplessness: On depression, development, and death*. New York, NY: WH Freeman/Times Books/Henry Holt & Co.
- Sherman, D. K., & Kim, H. S. (2005). Is there an “I” in “team”? The role of the self in group-serving judgments. *Journal of Personality and Social Psychology*, 88(1), 108–120. <http://dx.doi.org/10.1037/0022-3514.88.1.108>.
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and non-experimental studies: New procedures and recommendations. *Psychological Methods*, 7(4), 422–445. <http://dx.doi.org/10.1037/1082-989X.7.4.422>.
- Simon, J. G., & Feather, N. T. (1973). Causal attributions for success and failure at university examinations. *Journal of Educational Psychology*, 64(1), 46–56. <http://dx.doi.org/10.1037/h0034083>.
- Sirota, N., & Pitesa, M. (2017). Economic downturns undermine workplace helping by promoting a zero-sum construal of success. *Academy of Management Journal*, 60(4), 1–21. <http://dx.doi.org/10.5465/amj.2015.0804>.
- Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology*, 89(6), 845–851. <http://dx.doi.org/10.1037/0022-3514.89.6.845>.
- Stevens, G. E., & DeNisi, A. S. (1980). Women as managers: Attitudes and attributions for performance by men and women. *Academy of Management Journal*, 23(2), 355–361. <http://dx.doi.org/10.2307/255438>.

- Taylor, S. E. (1989). *Positive illusions: Creative self-deception and the healthy mind*. New York, NY: Basic Books.
- Tetlock, P. E. (1985). Accountability: A social check on the fundamental attribution error. *Social Psychology Quarterly*, 48(3), 227–236. <http://dx.doi.org/10.2307/3033683>.
- The World Bank. (1997). Corruption and Economic Development. *Helping Countries Combat Corruption: The Role of the World Bank*. Retrieved from <http://www1.worldbank.org/publicsector/anticorrupt/corruptn/cor02.htm>.
- The World Bank (2015). World development indicators. Retrieved from <http://data.worldbank.org/data-catalog/world-development-indicators>.
- Torngren, G., & Montgomery, H. (2004). Worse than chance? Performance and confidence among professionals and laypeople in the stock market. *Journal of Behavioral Finance*, 5(3), 148–153. http://dx.doi.org/10.1207/s15427579jpfm0503_3.
- Trzebinski, J. (1985). Action-oriented representations of implicit personality theories. *Journal of Personality and Social Psychology*, 48(5), 1266–1278. <http://dx.doi.org/10.1037/0022-3514.48.5.1266>.
- U.S. Social Security Administration (2014). Popular Baby Names. Retrieved from: <http://www.ssa.gov/OACT/babynames/limits.html>.
- Van Boven, L., Judd, C. M., & Sherman, D. K. (2012). Political polarization projection: Social projection of partisan attitude extremity and attitudinal processes. *Journal of Personality and Social Psychology*, 103(1), 84–100. <http://dx.doi.org/10.1037/a0028145>.
- Van Boven, L., & Loewenstein, G. (2003). Social projection of transient drive states. *Personality and Social Psychology Bulletin*, 29(9), 1159–1168. <http://dx.doi.org/10.1177/0146167203254597>.
- Van den Bos, K., & Lind, E. A. (2002). Uncertainty management by means of fairness judgments. In M. P. Zanna (Vol. Ed.), *Advances in Experimental Social Psychology: Vol. 34*, (pp. 1–60). San Diego, CA: Academic Press.
- Varnum, M. E., Grossmann, I., Kitayama, S., & Nisbett, R. E. (2010). The origin of cultural differences in cognition the social orientation hypothesis. *Current Directions in Psychological Science*, 19(1), 9–13. <http://dx.doi.org/10.1177/0963721409359301>.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS Scales. *Journal of Personality and Social Psychology*, 54(6), 1063–1070. <http://dx.doi.org/10.1037/0022-3514.54.6.1063>.
- Wojciszke, B. (1994). Multiple meanings of behavior: Construing actions in terms of competence or morality. *Journal of Personality and Social Psychology*, 67, 222–232. <http://dx.doi.org/10.1037/0022-3514.67.2.222>.
- Wojciszke, B. (2005). Morality and competence in person- and self-perception. *European Review of Social Psychology*, 16(1), 155–188. <http://dx.doi.org/10.1080/10463280500229619>.
- Wojciszke, B., Bazinska, R., & Jaworski, M. (1998). On the dominance of moral categories in impression formation. *Personality and Social Psychology Bulletin*, 24(12), 1251–1263. <http://dx.doi.org/10.1177/01461672982412001>.
- World Values Survey. *World Value Survey 1981–2014 official aggregate v.20150418*. (2015). Retrieved from: <http://www.worldvaluessurvey.org/>.
- World Values Survey (2016). Fieldwork and sampling. Retrieved from <http://www.worldvaluessurvey.org/WVSContents.jsp?CMSID=FieldworkSampling>.