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Abstract

Previous research has shown that positive thinking, in the form of fantasies about an idealized future, predicts low effort and poor performance. In the studies reported here, we used computerized content analysis of historical documents to investigate the relation between positive thinking about the future and economic development. During the financial crisis from 2007 to 2009, the more weekly newspaper articles in the economy page of *USA Today* contained positive thinking about the future, the more the Dow Jones Industrial Average declined in the subsequent week and 1 month later. In addition, between the New Deal era and the present time, the more presidential inaugural addresses contained positive thinking about the future, the more the gross domestic product and the employment rate declined in the presidents' subsequent tenures. These counterintuitive findings may help reveal the psychological processes that contribute to an economic crisis.

Keywords

positive thinking, thinking about the future, computerized content analysis, economic performance, financial crisis, presidential rhetoric, motivation, performance, goals

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The economic crisis from 2007 to 2009 was a major disaster in U.S. history (Bailey & Elliot, 2009). It has been suggested that a host of different factors triggered the outbreak of the crisis (Levin & Coburn, 2011). President Obama (2009) argued that one factor was a “culture of irresponsibility” (para. 4). Although politicians and economists agree that the crisis was human-made, research exploring the psychological processes underlying economic development is scarce. A common belief of many people is that depicting the future in an idealized way is generally beneficial for performance and success (e.g., obtaining profits in the stock market; Ehrenreich, 2009). In the research reported here, we performed a content analysis on newspaper reports and presidential addresses to investigate whether, contrary to lay belief, a cultural climate of thinking positively about an idealized future, rather than leading to an economic upturn, instead predicts economic downturn.

Positive Thinking About the Future

Following Oettingen and Mayer (2002), we defined positive thinking about the future as freely generating thoughts and images that depict possible futures in an idealized way. Such thoughts and images are independent of one's performance history. One may, for example, envision gaining a million dollars with high-risk shares without ever having made any profit on the stock market. Because such fantasizing about having attained a desired future may lead people to mentally enjoy the idealized future in the here and now, it prevents them from preparing for possible obstacles and from mobilizing the effort

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needed to make the events come true. Indeed, positive thoughts and images about the future predicted low effort and little success in attaining the desired future. This pattern has been shown across life domains (achievement, interpersonal, health), the life cycle (childhood to old age), and cultures (Europe, United States; for a summary, see Oettingen, 2012).

In one study, university graduates reported how often they had recently experienced positive and negative thoughts about their transition into work life (Oettingen & Mayer, 2002). Two years later, they were contacted again: The more the graduates had experienced positive thoughts about getting their favorite job, the fewer applications they had sent, the fewer job offers they had received, and the lower their salaries were. Positive thoughts and images also predicted low course grades for students anticipating an exam, poor recovery among patients undergoing hip-replacement surgery, and little dating success for students (Oettingen & Mayer, 2002), as well as poor weight loss among obese patients (Oettingen, 2012) and low attendance and poor grades for economically disadvantaged adolescents (Kappes, Oettingen, & Mayer, 2012). When positive (vs. questioning or negative) future thoughts were experimentally induced, they led to less success in managing one's weekly obligations. This effect was mediated by low effort, as assessed by feelings of energy (Kappes & Oettingen, 2011). Moreover, participants who were asked to envision future academic success (e.g., obtaining an "A" on an exam) received worse grades, initiated fewer problem-solving strategies, and made less effective plans than participants who were asked to consider a detailed path to success (Taylor, Pham, Rivkin, & Armor, 1998).

Finally, positive thinking about the future caused people to favor pro over con information, which lured them into risky decisions (Kappes & Oettingen, 2012). Risky decision making may contribute to the outbreak of a crisis, and once a crisis has erupted, positive thinking about the future should prevent its resolution: For example, envisioning success in resolving a crisis (e.g., hurricane damage) deterred participants from investing resources (e.g., donating their time) for resolving the crisis (Kappes, Sharma, & Oettingen, 2013). Because people are the motor force behind economic growth (Rauch, 1993), we suspected that, just as positive thinking about the future in individuals predicts low personal achievement, a cultural climate of positive thinking about the future would predict low economic achievement at the level of the society. We assessed the degree to which there is a cultural climate of positive thinking about the future by measuring such thinking in historical documents (newspaper reports and presidential addresses). We assessed economic achievement by the following indicators: the Dow Jones Industrial Average (commonly known as "the

Dow"), gross domestic product (GDP), and unemployment rate.

Content Analysis of Historical Documents

Previous research has relied on content analysis of historical documents as a method of examining relationships among variables within a society (Zullow, Oettingen, Peterson, & Seligman, 1988). For example, using content analysis to assess need for achievement (the desire to accomplish something difficult and attain a standard of excellence; Murray, 1938), research has shown that people with a high need for achievement engage in highly accomplished entrepreneurial professions (e.g., business founders, stockbrokers; McClelland, 1961). McClelland and colleagues also analyzed the content of historical documents in different societies and historical times. Achievement themes in historical documents (dramas, accounts of sea voyages, street ballads) predicted economic development (e.g., gain rates in coal imports) in England from Tudor times to the industrial revolution, in Spain in the late Middle Ages, and in ancient Greece. In sum, just as a high need for achievement predicted high personal achievement in individuals, the expression of a high need for achievement in historical documents predicted high economic achievement in a society.

An analogous pattern was found in research on need for power (the desire to exert control over the physical and social world; McClelland, 1975). People with high need for power tended to engage in arguments, competition, and displays of aggressive impulses (McClelland, 1975). An analysis of historical documents (presidential addresses, political communications) revealed that a high need for power, as expressed in the documents, preceded periods of war (McClelland, 1975; Winter, 1987, 1993). In these studies, the researchers developed and validated their own coding systems for content analyses. Here, we used a standardized, computerized text-analysis program, Linguistic Inquiry and Word Count (LIWC; Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007).

Linguistic Inquiry and Word Count (LIWC)

LIWC analyzes text by comparing each word with a dictionary. The dictionary is composed of 2,290 words that have been organized into 74 categories by independent judges. The categories include emotional processes (e.g., *positive emotion*, *negative emotion*) and temporal dimensions (e.g., *future tense*, *past tense*). The program counts the number of words that belong to each category and calculates the percentage of total words that they

represent. LIWC has been validated (Pennebaker et al., 2007; Tausczik & Pennebaker, 2010) and used to analyze the content of historical documents (Pennebaker, Slatcher, & Chung, 2005). Besides analyzing text on single categories, one can also group multiple categories into more complex categories (Newman, Pennebaker, Berry, & Richards, 2003; Slatcher, Chung, Pennebaker, & Stone, 2007). Thus, to create our linguistic measure of positive thinking about the future, we grouped together relevant LIWC categories.

As an indicator of how much a text has a positive rather than a negative valence, we subtracted the negative-emotion words (e.g., “sad”) from the positive-emotion words (e.g., “happy”). As an indicator of how much a text focused on the future rather than the past, we subtracted past-tense words (e.g., “did”) from future-tense words (e.g., “will”). We then added together the two indices. The full formula is as follows: (positive emotion – negative emotion) + (future tense – past tense). Following Slatcher and colleagues (2007), we first converted the output of the categories to z scores (across texts). A high value on the index indicated that a text included many positive-emotion or future-tense words (or both) and few negative-emotion or past-tense words (or both). We tested whether our LIWC index correlated with the scores of two independent raters who analyzed the content of 50% of the texts. The correlations between the LIWC index and the ratings were highly significant, $p_s < .004$ (Study 1: $r = .49$, Study 2: $r = .79$). The coding scheme and rating procedure are reported in the Supplemental Material available online.

Study 1: Newspaper Articles About the 2007 to 2009 Economic Crisis

In Study 1, we investigated whether a cultural climate of positive thinking about the future may have contributed to the 2007 to 2009 economic crisis. One of the most prominent markers of the crisis was a crash on the stock exchange (Browning, 2008). Therefore, we took the Dow as our indicator of economic performance. The Dow is the most cited and widely recognized index for stock-market activity, and its performance is strongly influenced by economic reports (Sullivan & Sheffrin, 2003). Therefore, we chose to analyze newspaper reports about the crisis from the Economy section of the daily newspaper with the highest circulation (2.2 million) at the time of the crisis, *USA Today*. We then tested whether positive thinking about the future in the reports predicted a decline of the Dow over periods of 1 week and 1 month. We chose these two periods to account for short-term fluctuations and more long-term developments in the Dow.

Method

Newspaper articles. We analyzed 99 articles. From a randomly chosen weekday of each week between August 2007 and June 2009 (the crisis’s onset and offset months; National Bureau of Economic Research, 2010), we picked the longest article about the crisis from the front page of the Money section of *USA Today*. We analyzed the content of the articles using the linguistic measure of positive thinking about the future described in the introduction. See Table 1 for example excerpts of the articles and how they were scored (see Table S1 in the Supplemental Material for the complete list of articles and scores).

Economic data. To calculate the Dow change, we averaged the Dow closing values of each weekday of the week each article was published and took the average score as a baseline. We also calculated average Dow scores for the subsequent week and for the fifth week after each article was published. We then calculated Dow change scores by subtracting the baseline Dow value from the average Dow value of the subsequent week and of the fifth week after each article was published, respectively. To test the alternative hypothesis that economic downturn precedes rather than follows positive thinking about the future, we also calculated Dow change scores from the first and from the fifth week before each article was published to the week each article was published.

Results

Positive thinking about the future in the articles predicted declines in the Dow from the week the articles were published to the subsequent week, $\beta = -0.26$, $F(1, 96) = 7.06$, $p = .009$, and (marginally) to 1 month after, $\beta = -0.18$, $F(1, 96) = 3.32$, $p = .07$ (Fig. 1). We also tested whether the reverse was true, that is, whether declines in the Dow predicted subsequent positive thinking about the future. We found that Dow change from 1 week and 1 month before the articles were published did not predict subsequent positive thinking in the articles ($p_s > .31$). Thus, mirroring the relationship between individuals’ positive thinking about the future and personal achievement, positive thinking in the articles preceded rather than followed economic downturn.

Study 2: Presidential Inaugural Addresses From the New Deal to the Present

In Study 2, we asked whether positive thinking about the future in U.S. presidents’ inaugural addresses predicted economic development. Following earlier approaches

Table 1. Linguistic Category Coding of Example Excerpts From Newspaper Articles Included in Study 1

Excerpt	Publication date	Linguistic category			
		Positive emotion	Negative emotion	Future tense	Past tense
“The reason for [CEO of General Motors Rick] Wagoner’s confident appearance is his unshakable belief that things will get better soon enough.” (Carty, 2009)	February 12, 2009	“Confident,” “better”	—	“Will”	—
“I would love people in the future to say, ‘There’s Toyota and Honda and Ford,’ says Ford’s North American chief Mark Fields. ‘We have the goods to do it.’” (Woodyard, 2009)	April 1, 2009	“Love”	—	“Would”	—
“Merrill [Lynch] has lost more than \$45 billion on its mortgage investments, raising fears that it could be the next bank to go under.” (Chu & Krantz, 2008)	September 16, 2008	—	“Fears”	—	“Lost”
“Several lawmakers said they were hoping to vote on a version of the Treasury Department’s \$700 billion plan by Sunday at the latest, concerned about a negative market reaction if they didn’t reach agreement by the start of business next week.” (Kirchhoff & Hagenbaugh, 2008)	September 25, 2008	“Hoping”	“Negative”	—	“Were,” “didn’t”
“Consumers who pulled money out of their homes as the market soared in recent years will also be in for a shock as home prices fall during the worst real estate recession since the Great Depression.” (Chu, Silke, Farrell, & Hagenbaugh, 2007)	November 26, 2007	—	“Shock,” “worst”	“Will”	“Pulled”

Note: Linguistic categories were coded using the text-analysis program Linguistic Inquiry and Word Count (Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007).

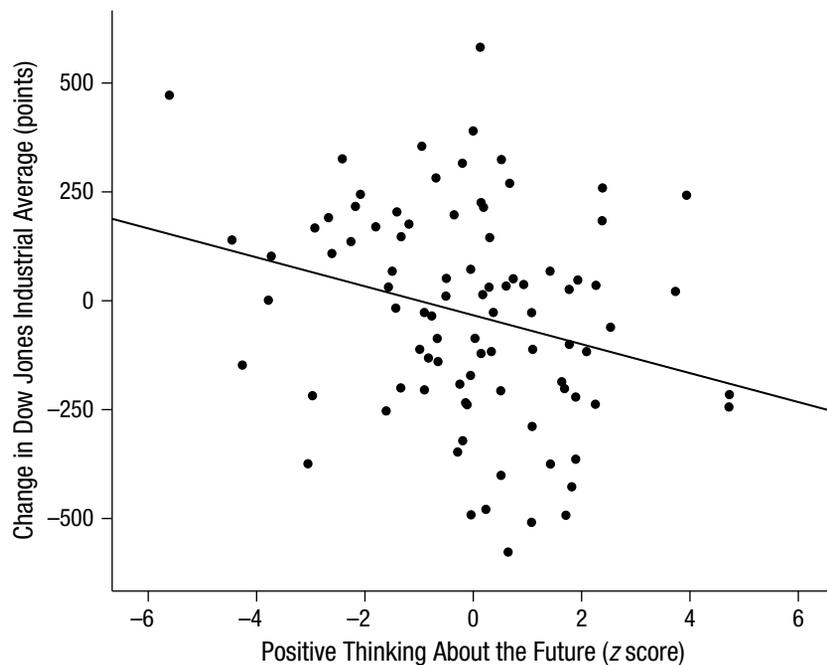


Fig. 1. Results from Study 1: scatter plot (with best-fitting regression line) showing change in the Dow Jones Industrial Average as a function of positive thinking about the future in newspaper articles about the 2007 to 2009 financial crisis. Change in the Dow was calculated from the week each article was published to the subsequent week. See text for details of how positive thinking about the future was calculated.

(Wood, Owens, & Durham, 2005; Zullo et al., 1988), we analyzed presidential addresses because they are an important element of U.S. culture and reflect the current state of the society (Wood et al., 2005). The president is the most visible economic actor in the United States; he is formally responsible for economic stability (e.g., as indexed by unemployment rates; Carroll, 1995), and his public approval strongly depends on the development of the economy (MacKuen, 1983). We measured changes in GDP and unemployment rate, because these are the most valid long-term indicators of economic performance (Sullivan & Sheffrin, 2003). We tested whether more positive thinking about the future in inaugural addresses was associated with greater declines in economic performance during the subsequent presidential tenures.

Method

Presidential addresses. We analyzed all 21 inaugural addresses from U.S. presidents between 1933 and 2009. We chose 1933 as the starting year because from this year on, official GDP and unemployment data are available

from the U.S. government. In cases in which a president was reelected, we included all of his addresses. We performed a content analysis on the addresses using the same measure of positive thinking about the future as in Study 1. See Table 2 for example excerpts and how they were scored (see Table S2 in the Supplemental Material for the complete list of addresses and scores).

Economic indicators. GDP is defined as the total value of all goods and services produced in a country in a given period; unemployment rate is defined as the percentage of workers in the labor force who are unemployed (Sullivan & Sheffrin, 2003). To calculate GDP change during the 4-year tenure after each inaugural address, we took the GDP of the year the address was given as a baseline. We calculated the GDP change during that tenure by subtracting the baseline GDP from the GDP of the year the next inaugural address was given. To calculate change in unemployment, we used an analogous procedure. We reversed the unemployment change scores so that positive numbers indicated a decrease in unemployment. To create a single index of economic

Table 2. Linguistic Category Coding of Example Excerpts From Inaugural Addresses Included in Study 2

Excerpt	Inaugural address	Linguistic category			
		Positive emotion	Negative emotion	Future tense	Past tense
“The challenge of our past remains the challenge of our future, will we be one nation, one people, with one common destiny.” (Clinton, 1997)	Bill Clinton (1997)	—	—	“Future, will”	“Past”
“We will turn to the only resource we have that in times of need always grows—the goodness and the courage of the American people.” (Bush, 1989)	George Bush (1989)	“Goodness”	—	“Will”	—
“Your dreams, your hopes, your goals are going to be the dreams, the hopes and the goals of this administration, so help me God.” (Reagan, 1981)	Ronald Reagan (1981)	“Dreams,” “hopes”	—	“Are going to”	—
“All countries, including our own, will greatly benefit from a constructive program for the better use of the world’s human and natural resources.” (Truman, 1949)	Harry S. Truman (1949)	“Greatly,” “better”	—	“Will”	—
“Taxes have risen; our ability to pay has fallen; government of all kinds is faced by serious curtailment of income [. . .] the savings of many years in thousands of families are gone.” (Roosevelt, 1933)	Franklin D. Roosevelt (1933)	—	“Serious”	—	“Risen,” “fallen,” “gone”

Note: Linguistic categories were coded using the text-analysis program Linguistic Inquiry and Word Count (Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007).

development, we z -transformed the GDP change scores and the reversed unemployment change scores and combined them. To test the alternative hypothesis that economic downturn precedes rather than follows positive thinking about the future, we also calculated economic development during the 4-year tenure before each presidential address.

Results

Positive thinking about the future in the inaugural addresses predicted declines in economic development in subsequent presidential tenures, $\beta = -0.55$, $F(1, 19) = 8.32$, $p = .01$ (Fig. 2).^{1,2} As in Study 1, we also tested whether the reverse was true, that is, whether declines in economic development predicted positive thinking about the future. This, however, was not the case ($p = .90$).

General Discussion

In the present research, positive thinking about the future expressed in newspaper articles and presidential addresses predicted economic downturn in a society. In explaining

this relationship, we propose that a cultural climate of positive thinking about the future reflected in the articles and addresses may have contributed to low economic achievement just as positive thinking about the future in individuals has been shown to lead to low personal achievement (Kappes & Oettingen, 2011; Oettingen & Mayer, 2002; for a summary, see Oettingen, 2012). That is, when the zeitgeist is to imagine idealized positive futures (e.g., a booming economy), people may refrain from preparing and planning for potential difficulties and cut down on the effortful work that actually fuels the economy. They may also feel encouraged to engage in risky enterprises (e.g., taking up adjustable mortgages, buying high-risk shares).

The correlational design of our studies does not allow the drawing of causal inferences. Therefore, one might argue that positive thinking in the articles and addresses not only is an expression of the current cultural climate but also fosters a cultural climate of thinking positively that contributes to economic downturn. One could also argue that positive thinking in the articles and addresses directly fosters economic downturn (e.g., by directly affecting economic agents, such as stock brokers and consumers). Finally, economic downturn may foster a

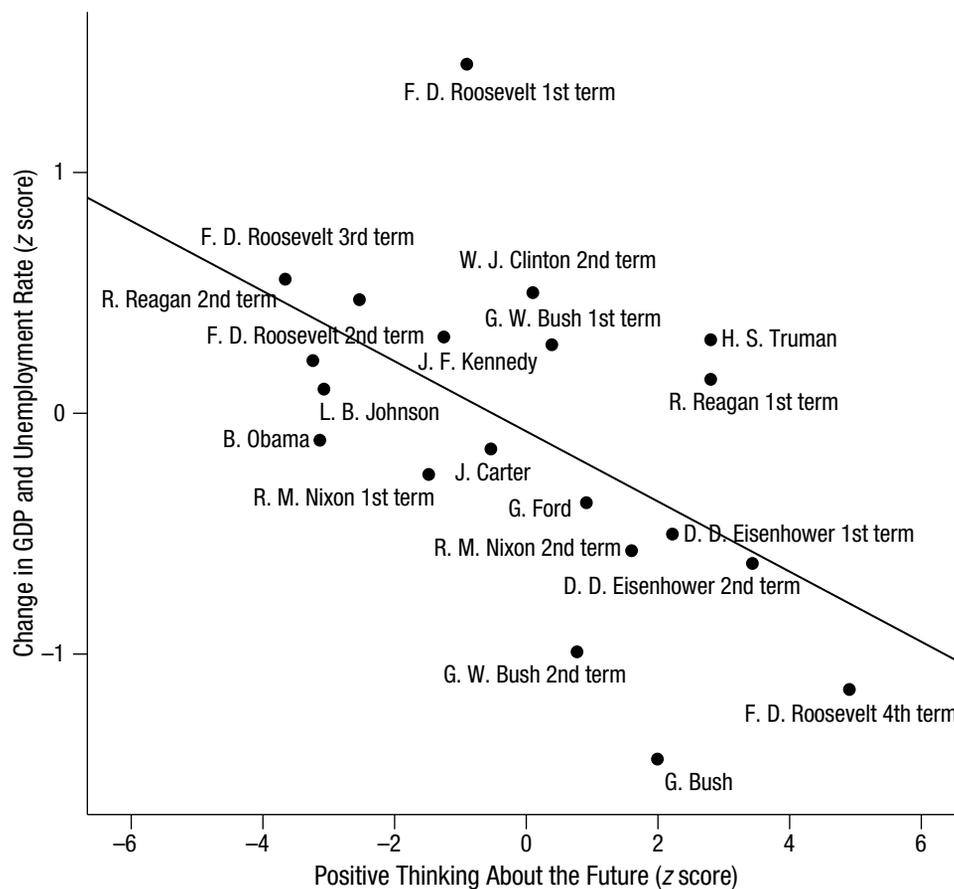


Fig. 2. Results from Study 2: scatter plot (with best-fitting regression line) showing economic development as a function of positive thinking about the future in presidential inaugural addresses. Economic development was a composite measure of change in gross domestic product (GDP) and unemployment rates. See text for details of how positive thinking about the future was calculated.

cultural climate of positive thinking (as well as articles or addresses expressing positive thinking about the future) that would allow people to mentally escape their harsh reality. Our finding that economic downturn did not predict positive thinking about the future, however, speaks against this possibility. Future work may investigate the generalizability of the findings using various other historical documents (e.g., textbooks, business reports, blogs) published in different countries (e.g., England, Germany, China) as well as in different historical eras (e.g., the industrial revolution, the Eurozone crisis). In closing, the present results suggest that contrary to the lay belief that envisioning future events in an idealized way is beneficial for effort and success, a cultural climate of positive thinking about the future may be an important psychological factor that does not contribute to an economic upturn but rather to an economic downturn.

Author Contributions

A. T. Sevincer and G. Oettingen developed the study concept and design. J. Kalvelage collected and analyzed the data for Study 1; G. Wagner collected and analyzed the data for Study 2. A. T. Sevincer and G. Oettingen drafted the manuscript; G. Wagner and J. Kalvelage provided comments. All authors approved the final version of the manuscript for submission.

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Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Supplemental Material

Additional supporting information may be found at <http://pss.sagepub.com/content/by/supplemental-data>

Notes

1. Positive thinking about the future predicted both indicators of economic development: downturn in GDP (marginally), $\beta = -0.41$, $p = .06$, and worsening of the unemployment rate, $\beta = -0.45$, $p = .04$. Downturn in GDP and worsening of the unemployment rate correlated positively ($r = .21$, $p = .37$).
2. The regression remained significant when the outlier (Franklin D. Roosevelt's first term) was removed, $F(1, 18) = 8.80$, $p = .008$ (see Fig. 2).

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