Grandiose narcissists and decision making: Impulsive, overconfident, and skeptical of experts–but seldom in doubt

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A B S T R A C T

A substantial body of research has documented that grandiose narcissists are characterized by high self-esteem, a sense of personal superiority and entitlement, overconfidence, a willingness to exploit others for self-gain, and hostility and aggression when challenged. We report two studies ($N = 452$) that explore how these dispositions affect their decision making. We show that grandiose narcissists' overconfidence, impulsivity, and a willingness to ignore expert advice results in a higher likelihood of making a bad decision. In addition, after getting the wrong answer, grandiose narcissists are more likely to blame others and remain self-confident in their judgment.

1. Introduction

The past decade has seen an impressive outpouring of research on narcissism in general and grandiose narcissism in particular. Narcissism is a relatively stable individual difference characterized by grandiosity, self-confidence, risk taking, impulsiveness, an inflated view of one's abilities, a sense of entitlement, low social empathy, and a willingness and ability to use others to achieve one's own self-interest. It can be thought of as a spectrum with both very high and very low levels being potentially problematic (Grijalva et al., 2015; Krizan & Herlache, 2017). Although an old construct in psychology, more recent research has identified two primary types of narcissism (Rose, 2002; Wright, 2016). One stream, emerging from a more clinical tradition, has focused on what is referred to as vulnerable or clinical narcissism, which is characterized by anxiety, a fragile self-concept, and low self-esteem (e.g., Ackerman et al., 2017; Rohmann et al., 2012). This form of narcissism emphasizes a defensive self-presentation stemming from low self-esteem and a more introverted nature.

In contrast, a larger body of research has focused on grandiose narcissism—a more assertive and extraverted form characterized by high self-esteem, a sense of personal superiority and entitlement, overconfidence, a willingness to exploit others for self-gain, and hostility and aggression when challenged (e.g., Miller et al., 2017). This research has shown that grandiose narcissists often seek out and attain positions of leadership in organizations, but their propensity to pursue their own interests at the expense of the collective can jeopardize the organizations and institutions they lead (Brunell et al., 2008; Jonason et al., 2018; Nevicka et al., 2018; Wille et al., 2013). Although there is some overlap between the two types of narcissism, the preponderance

of evidence suggests that they are distinct constructs (Maxwell et al., 2011). We focus here on grandiose narcissism.

Grandiose narcissists often emerge as organizational leaders and are likely to earn more, rise to positions of power, and be successful in their careers (Hirschi & Jaensch, 2015; Jonason et al., 2018; Maccoby, 2007; Spurk et al., 2016). To explain this, researchers suggested that there could be both a "bright" and a "dark" side to narcissistic leadership (e.g., Paunomen et al., 2006; Volmer et al., 2016; Wales et al., 2013). For instance, in a review of narcissistic leadership, Rosenthal and Pittinsky (2006) noted that "narcissists have the charisma and vision that are vital to effective leadership (p. 617)." There was a recognition that narcissistic leaders, because of their boldness and self-confidence, could be effective when circumstances demanded change (Mathieu & St-Jean, 2013; Nevicka et al., 2013). For instance, several studies showed that narcissistic CEOs were more aggressive in investing in new technology (Gerstner et al., 2013), expanding their firms into global markets (Oesterle et al., 2016), and making acquisitions (Chatterjee & Hambrick, 2007).

However, research has also shown that grandiose narcissists' propensity to pursue their own interests can jeopardize the organizations and institutions they lead (e.g., Brunell et al., 2008; Nevicka et al., 2018). Several recent review papers have documented this danger (e.g., Braun, 2017; Campbell et al., 2011; Landay et al., 2019; O'Reilly & Chatman, 2020). Because numerous studies have shown a wide range of negative organizational outcomes of narcissism, we focused on the specific aspects of narcissism that might create such effects and attempt to show how these particular attributes lead to poor decision making.

Research paints a compelling and unflattering picture of the grandiose narcissist as one who is overly confident and convinced that

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they are special and better than others—especially more creative, competent, and intelligent (e.g., Gabriel et al., 1994; Miller et al., 2017). They often believe that their ideas are superior and that, as a result, they, uniquely, can solve intractable problems (Brummelman et al., 2016). Interestingly, although they are confident in their superior intelligence and leadership abilities, research shows that they are typically no better and sometimes perform worse than non-narcissists (e.g., Blair et al., 2008; Guedes, 2017).

Because grandiose narcissists are motivated to seek outcomes that demonstrate their superiority, they have been found to be more sensitive to approach desirable outcomes and only weakly motivated to ignore negative ones (e.g., Buchholz et al., 2019; Foster & Trimm, 2008). This propensity has been associated with greater risk taking. For example, when the odds of losing increase, non-narcissists predictably are less likely to take a bet while narcissists increase the probability of taking the same bet (O'Reilly et al., 2018). Other studies have shown that because grandiose narcissists feel that they are special, they are more likely to manipulate others, even lying, cheating, and stealing (e.g., O'Reilly & Doerr, 2020; Schroeder-Abe & Fafouta, 2019). Research has also shown that because they often feel that they are not being recognized as superior, grandiose narcissists often respond with hostility (e.g., Blinkhorn et al., 2015; Bogart et al., 2004).

While some make a case that there is a "bright side" to narcissism, the overall picture does not appear to support this contention. In her review of the narcissism literature, Braun (2017, p. 17) concludes that "there are few positive outcomes of leader narcissism…and many negative consequences." The research suggests that when occupying positions of power in organizations, grandiose narcissists can put their organizations at risk. Research in finance and accounting, for example, has shown that narcissistic CEOs are more likely to engage in questionable accounting practices and manipulate earnings, (Banerjee et al., 2018; Ham et al., 2017; Olsen & Stekelberg, 2016) and to engage in fraud and costly litigation (O'Reilly et al., 2018; Rijsenbilt & Commandeur, 2013; Van Scotter & De Dea Roglio, 2018). There is evidence that these firms are more likely have volatile stock prices but not perform better in financial terms (Chatterjee & Hambrick, 2007; Foster et al., 2011). They are more likely to engage in more acquisitions and to overpay for these (Atkas et al., 2016).

1.1. Grandiose narcissists and decision making

Although the research on narcissism is voluminous, one area that has received comparatively less attention is how grandiose narcissists make decisions, especially those choices that might put their organizations at risk. Three of their defining characteristics seem relevant and likely to increase the probability that narcissists will make less accurate decisions than non-narcissists: (1) overconfidence (confidence in one's abilities that is not justified by one's objective skills), (2) skepticism about the value of expert opinions, and (3) impulsivity or the propensity to make decisions quickly. Because narcissists are overconfident and convinced of their own superiority, they have been shown to rely more on their own intuition than listen to experts, and to be skeptical of others. Overconfidence in their own abilities can also lead them to be impulsive—not needing to spend time listening to others and considering alternative approaches.

1.2. Three main characteristics of grandiose narcissists

1.2.1. Overconfidence

In a gambling study, Campbell et al. (2004) showed that because grandiose narcissists are overconfident, they are also likely to place more and riskier bets—and to lose more than non-narcissists. Narcissism is associated with greater risk taking but not better performance. Other research has shown that narcissists understand these risks but see the opportunity to shine as outweighing any potential downside (Foster et al., 2009; Lakey et al., 2008). For example, in a five-week study of

stock investing, narcissists picked more volatile sticks and lost more (Foster et al., 2011). Littrell et al. (2020) suggest that because of their overconfidence in their own judgment, narcissists are more likely to rely on their intuition and less on data or experts. This suggests the following hypothesis:

Hypothesis 1a. Narcissists will be more overconfident than non-narcissists.

Hypothesis 1b. Because narcissists are more overconfident than non-narcissists, they will be likely to make poorer decisions.

1.2.2. Distrust of experts

Several studies have shown that narcissists have less trust in experts than non-narcissists. For example, O'Reilly et al. (2018) showed that narcissists rated experts as less credible than non-narcissists. In three studies, Kausel and his coauthors showed that narcissism was negatively related to advice taking (Kausel et al., 2015). They suggest that because narcissists have an inflated view of their own competence and intelligence and are less concerned about the feelings of others, they are willing to ignore expert advice. Underscoring this, Kong (2015) showed that narcissists see others as less competent and benevolent—and are more willing to dismiss their opinions. In a field study Zhu and Chen (2015) reported that more narcissistic CEOs "strongly resist the influence of other directors' experience, but also demonstrate their superiority by adopting corporate strategies that are the opposite of what fellow directors' prior experience would suggest (2015, p. 31)." This suggests the following hypothesis:

Hypothesis 2a. Narcissists will value expert advice less than non-narcissists.

Hypothesis 2b. Because narcissists see expert advice as less useful than non-narcissists, they will be more likely to make poorer decisions.

1.2.3. Impulsivity

Because of their strong approach motivation and weak avoidance motivation, narcissists have been shown to make choices more quickly than non-narcissists. This often includes an insensitivity to the negative consequences in making choices (Littrell et al., 2020; Malesza & Kaczmarek, 2018). In a meta-analysis of studies of narcissism and impulsivity, Vazire and Funder (2006) find strong support for the association of narcissism and impulsivity and conclude that "impulsivity is one of the defining characteristics of narcissism (p. 158)" and that this behavior can "provide short-term benefits but lead to negative long-term outcomes (p. 160)." They argue that impulsivity should be taken into account when examining other aspects of narcissism. In making decisions, we consider whether narcissists' impulsivity might truncate their search for information and potentially lead to poorer decision quality.

Hypothesis 3a. Narcissists will be more impulsive than non-narcissists.

Hypothesis 3b. Because narcissists are more impulsive than non-narcissists, they will be likely to make poorer decisions.

1.3. Additional characteristics that define grandiose narcissists

Narcissists have been found to externalize blame when challenged or confronted with failure. For instance, several studies have shown that narcissists are more likely to take credit for a successful outcome and blame a failure on others than non-narcissists (Campbell et al., 2000; Selle et al., 2019; Stucke, 2003). Related research has also shown that when confronted with challenges, narcissists react more negatively than do non-narcissists (Park & Colvin, 2014), are less likely to acquiesce (Brunell & Davis, 2016), and more likely to respond with hostility (Boeckler et al., 2017; Twenge & Campbell, 2003). This suggests

the following hypothesis:

Hypothesis 4. After making a poor decision, narcissists are more likely to externalize blame than non-narcissists.

Finally, not only are narcissists more overconfident than non-narcissists but research has shown that narcissists are less likely to learn from their failures (Campbell et al., 2004). For example, in a study of Chinese entrepreneurs, Liu and his colleagues found that narcissists learned less from their failure than did the non-narcissists (Liu, Li, Hao & Zhang, 2019). Other studies have shown why this might be. For example, research has shown that narcissists are less likely to engage in cognitive reflection than non-narcissists (Littrell et al., 2020) and are more defensive and see negative feedback as less diagnostic (Kernis & Sun, 1994). Thus, in the face of failure, we expect that non-narcissists are likely to become less confident while narcissists are more likely to remain overconfident and discount the negative information. This suggests the following:

Hypothesis 5. After making a poor decision, narcissists will remain more confident that non-narcissists.

2. Method

2.1. Overview of the studies

To explore the effects on decision making of the specific characteristics that define grandiose narcissism, we conducted two studies. The first used a modified version of the "acquire a company" problem developed by Bazerman and Samuelson (1983) and reported by Valley et al. (1998). In this scenario, a respondent is asked to decide how much one company should offer to acquire a second company. The information provided includes details on the company and the fact that acceptance of any offer is contingent on information the target firm's management has about the possible success or failure of an ongoing project that will materially affect the price of the company. Given these constraints, the correct economic answer is to make no offer ($0/share) since any offer above that will benefit the seller at the expense of the buyer—the co-called "winner's curse" (Thaler, 1988). Previous behavioral decision research using this experimental paradigm shows that most individuals are unlikely to get the correct answer because they fail to consider what the seller's acceptance of the bid means about the true value of the firm (e.g., Moser, 2019).

The second study used a variant of the Judge-Advisor System (JAS), a well-validated experimental paradigm in which respondents (the judge) are asked to answer a series of questions for which there are numeric answers, provided advice in the form of answers from another person (the advisor), and given the opportunity to modify their original answers (e.g., Bonaccio & Dalal, 2006; Gino, 2008; Rader et al., 2017). The extent to which the respondent adjusts his/her original estimates can be assessed and used to assess their willingness to accept advice. In this experiment, respondents were asked to give estimates of the years in which 10 historical events occurred. The estimates provided by the "advisor" provided the correct dates. Thus, the extent to which the respondent used the information from the advisor increased the accuracy of their answers.

2.2. Study 1

2.2.1. Research design

To explore the effects of narcissism on decision accuracy, we provided the respondent with the ability to access the opinions of three experts on the acquisition: the head of the company's merger and acquisition team, an industry analyst, and a finance professor with expertise in mergers and acquisitions. Respondents could choose to access these opinions, or not, by clicking on a check box to access the expert's opinion. Each of the experts provided an estimate of the value they believed was justified. However, only the finance professor provided a

clear rationale and logic for why the correct offer should be zero. Thus, respondents could decide on an offer price with or without accessing the expert opinions. If they did access the finance professor's opinion, they were provided the "correct" answer—an offer of $0/share.[1]

2.2.2. Participants

To examine the relationship between grandiose narcissism and decision-making accuracy, 252 subjects were recruited from mTurk and paid $1.80 for their participation. We screened subjects so that all who participated in the study resided in the U.S., and spoke English as their first language. Subjects were required to complete several attention-check questions throughout the scenario, and were prevented from participating in the study more than once. We also monitored the amount of time that subjects took to complete the scenario study ($M = 15.4$ min, $SD = 8.91$ min). No subjects were eliminated for taking too much or too little time. Of the 252 participants, 52% were male and the average age was 36.5. Sixty nine percent were Caucasian, 5% were African-American, 14% were Asian-American, and 7% were Hispanic. Average annual income was between $60,000–$80,000. Ninety-five percent of the respondents had at least a college education (61% had a college degree and 34% had either a graduate degree or some graduate education).

2.2.3. Independent variables
2.2.3.1. Narcissism. Narcissism was assessed using the 16-item Narcissistic Personality Inventory (NPI-16; Ames et al., 2006). This is a well-validated and widely used unidimensional measure of grandiose narcissism (e.g., Gentile et al., 2013).

2.2.3.2. Overconfidence. After reading the company overview but prior to making a decision about the offer price, participants were asked two questions assessing their level of confidence that their offer price would be correct. The first item was "How confident are you that your final offer will be correct?" (using a 7-point response scale from "not at all confident" to "completely confident"). The second item asked "How accurate do you think your answer will be compared to other participants?" (using 7-point response scale from "much less accurate" to "much more accurate"). These two items were highly correlated ($r = 0.50$, p $<$ .001) and combined to form a measure of pre-decision confidence.

After completing the experiment, making their decision, and being told the correct answer, respondents were again asked how confident they were in their decision using the same two items. Again, the two items were highly correlated ($r = 0.65$, p $<$ .001) and combined to form an index of post-decision confidence.

2.2.3.3. Expert advice. To assess respondents' general opinions about the value of expert advice, prior to reading the scenarios they were asked the following question: "When making difficult decisions, how useful do you find referencing expert opinions to help you make those decisions?" (using 7-point scale from "extremely useless" to "extremely useful"). As a second measure of the value of expert advice, we coded the number of expert opinions each respondent viewed (range: 0 to 3; $M = 2.12$, $SD = 0.99$).

2.2.3.4. Impulsivity. Impulsivity refers to the tendency to act with little forethought or reflection or a lack of "self-control necessary to inhibit the behaviors that thwart the attainment of their goals (Vazire & Funder, 2006, p. 154)." To assess impulsivity, we measured the total time each respondent spent on reading the initial scenario and the three expert opinions ($M = 3.08$ min, $SD = 3.38$ min; range $= 0$ min to 26.6 min).

2.2.4. Dependent variables
2.2.4.1. Decision accuracy. The Acquiring a Company Problem is predicated on research on the "winner's curse" (Bazerman &

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[1] Experimental materials available from the corresponding author.

Samuelson, 1983; Varaiya & Ferris, 1987) and has been shown to have a correct answer (Valley et al., 1998). In this scenario, the "correct" bid is to offer \$0—or make no offer as explained in the finance professor's opinion. Therefore, we constructed two measures of decision accuracy. The first measure is a dummy variable coded 1 if the respondent made an offer of \$0 and 0 otherwise. The second is the actual bid offered. Although any bid over \$0 is technically a wrong answer, lower bids are associated with less of a winner's curse.

2.2.4.2. Post-decision blame. To assess the respondents' tendency to externalize responsibility for making a bad decision, we asked them to answer two questions after making their decision and learning the correct answer: (1) I was distracted by my environment; and (2) There was too much to read. Responses were on a 7-point scale from "strongly disagree" to "strongly agree." The items were correlated ($r = 0.23$, $p < .001$) and were summed as an index assessing blame.

2.2.5. Control variables

We controlled for respondents' age, sex (1 = male, 0 = female), race (1 = white, 0 = non-white), income (1 = \$20,000 or less, 11 = more than \$200,000), and education (1 = graduate or professional degree, 2 = some graduate training, 3 = college degree, 4 = some college, 5 = high school).

2.2.6. Results

Table 1 reports the means, standard deviations and correlations among the variables. Several patterns are worth noting. First, consistent with previous research (e.g., Foster et al., 2003; Grijalva et al., 2015), narcissism is more prevalent among men ($r = -0.19$, $p < .01$) and among those reporting higher incomes ($r = 0.18$, $p < .01$). Second, as hypothesized, narcissism is positively associated with respondent confidence ($r = 0.25$, $p < .01$) and negatively associated with impulsivity, measured as the amount of time spent reading the experts' opinions ($r = -0.12$, $p < .10$) and the belief that expert opinions are useful ($r = -0.13$, $p < .10$), but is not significantly associated with decision accuracy. Finally, decision accuracy is positively associated with the number of expert opinions viewed ($r = 0.15$, $p < .05$), suggesting that expert opinions are useful.

To test hypotheses 1a, 2a, and 3a, we used ordinary least squares (OLS) regressions of narcissism on confidence, belief in the usefulness of expert advice, and impulsivity. Table 2 reports these results and confirms these hypotheses. After controlling for age, sex, race, income and education, narcissism is positively associated with confidence ($\beta = 0.07$, $p < .01$) and negatively associated with a belief that expert

opinions are useful ($\beta = -0.06$, $p < .01$) and impulsivity (assessed as the amount of time reading the expert opinions) ($\beta = -7.86$, $p < .05$). Narcissism was unrelated to the number of experts viewed ($\beta = -0.03$, ns). Gender was significantly associated with confidence ($\beta = -0.53$, $p < .01$) - women were less confident. As predicted, those higher in narcissism expressed more confidence in the accuracy of their decision, regarded expert opinions as less useful, and spent less time perusing the experts' opinions.

Hypotheses 1b, 2b, and 3b proposed that overconfidence, skepticism about experts, and impulsivity would be negatively associated with decision accuracy. Table 3 reports the logistic regression results testing these hypotheses for decision accuracy (did the respondent get the correct answer?) and largely confirms the hypotheses. Models 1 through 4 report the independent effects of these variables and show that respondents who are more confident make less accurate decisions ($\beta = -0.42$, $p < .05$), and those who express less trust in expert

Table 2

- Study 1. Regression of narcissism on confidence, impulsivity and use of experts 9n = 252.

		Confidence	Impulsivity	Experts useful	# of Experts
		Model 1	Model 2	Model 3	Model 4
		β	β	β	β
1	Age	0.00	2.37	−0.01	0.00
		(0.01)	(1.03)	(0.01)	(0.01)
2	Gender	−0.53***	−0.51	0.12	−0.12
		(0.12)	(24.8)	(0.14)	(0.12)
3	Race	0.34	−65.0	−0.31	0.46
		(0.28)	(60.5)	(0.34)	(0.30)
4	Income	0.04**	1.46	0.03	−0.01
		(0.02)	(4.43)	(0.03)	(0.02)
5	Education	0.11**	3.91	−0.04	0.05
		(0.07)	(14.1)	(0.08)	(0.07)
8	Narcissism (NPI-16)	0.07***	−7.86**	−0.06***	−0.03
		(0.02)	(4.29)	(0.02)	(0.02)
	F-ratio	1.60*	7.08***	1.57*	1.08
	df	251	251	251	251
	Adjusted R squared	0.01	0.13	0.01	0.00

(1-tailed tests).

* $p < .10$.

** $p < .05$.

*** $p < .01$.

Table 1

Study 1. Means, standard deviations, and correlations.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Narcissism - NPI-16	1.0													
2	Age	−0.02	1.0												
3	Gender (1 = male 0 = female)	−0.19**	0.03	1.0											
4	Race (1 = white 0 = nonwhite)	−0.01	0.11	0.01	1.0										
5	Income	0.18**	0.05	−0.05	0.11	1.0									
6	Education	−0.11	−0.18	−0.03	−0.03	−0.18**	1.0								
7	Impulsivity (time in seconds)	−0.12	0.14*	0.00	−0.06	−0.02	0.00	1.0							
8	Confidence (pre)	0.25**	0.04	−0.28**	0.08	0.12	0.08	−0.02	1.0						
9	Confidence (post)	0.11	0.16*	−0.17**	0.05	0.12	−0.07	0.07	0.18**	1.0					
10	Experts useful	−0.13*	−0.07	0.05	−0.06	0.06	−0.03	0.12	−0.03	−0.01	1.0				
11	# Experts	−0.07	0.07	−0.05	0.10	−0.01**	0.06	0.54**	−0.08	0.21**	0.08	1.0			
12	Blame	0.10	0.08	0.15*	−0.09	0.05	0.00	−0.15*	−0.11	−0.15*	0.06	−0.06	1.0		
13	Correct answer (1 = correct 0 = incorrect)	−0.05	0.09	−0.01	−0.02	−0.02	−0.10	0.00	−0.11	0.62**	0.11	0.15*	−0.13*	1.0	
14	Share price offer	0.02	−0.14*	−0.00	−0.13*	0.01	0.11	0.11	0.18**	−0.50**	0.09	−0.37**	0.07	−0.71**	1.0
	Mean	3.67	36.5	0.52	0.95	3.56	2.43	184.8	3.39	2.50	5.88	2.12	1.5	0.11	37.1
	Standard deviation	3.08	12.6	0.50	0.21	2.76	0.93	202.5	0.99	1.08	1.14	1.00	0.65	0.31	18.2

* $p < .05$.

** $p < .01$.

Table 3

Study 1: Dependent variable is correct answer (1 = correct, 0 = incorrect). Logistic regressions.

		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
		β	β	β	β	β	β	β
1	Age	0.02	0.02	0.02	0.02	0.02	0.02	0.02
		(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
2	Gender	−0.40	−0.40	−0.40	−0.40	−0.40	−0.40	−0.40
		(0.42)	(0.42)	(0.42)	(0.42)	(0.42)	(0.42)	(0.42)
3	Race	0.12	0.12	0.12	0.12	0.12	0.12	0.12
		(1.08)	(1.08)	(1.08)	(1.08)	(1.08)	(1.08)	(1.08)
4	Income	−0.07	−0.07	−0.07	−0.07	−0.07	−0.07	−0.07
		(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
5	Education	−0.30	−0.30	−0.30	−0.30	−0.30	−0.30	−0.30
		(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)
6	Confidence	–	−0.43**	–	–	–	−0.45**	−0.45**
			(0.23)				(0.25)	(0.25)
7	Impulsivity	–	–	0.00	–	–	−0.00	−0.00
				(0.00)			(0.00)	(0.00)
8	Experts useful	–	–	–	−0.23*	–	−0.26*	−0.26*
					(0.15)		(0.16)	(0.16)
9	# of experts	–	–	–	–	0.57***	0.82***	0.82***
						(0.26)	(0.30)	(0.30)
9	Narcissism (NPI-16)	−0.07	–	–	–	–	–	−0.07
		(0.07)						(0.08)
	Chi square	4.79	4.79	4.79	4.79	4.79	4.79	4.79
	df	247	247	247	247	247	247	247
	Cox & Snell R-square	0.02	0.02	0.02	0.02	0.02	0.02	0.02

* p < .10
** p < .05
*** p < .01

advice make less accurate decisions ($\beta = -0.24$, p < .10). Those who accessed more expert opinions made more accurate decisions ($\beta = 0.57$, p < .05). Impulsivity, or the amount of time reading the expert opinions, was unrelated to decision accuracy. Model 6 reports the combined effects and shows that more accurate decisions are related to less confidence, less distrust in experts, and the use of more expert opinions. Model 7 adds narcissism as an independent variable and shows that it is, by itself, unrelated to decision accuracy.

The results in Table 3 focus on decision accuracy coded as a dummy variable as the dependent variable (1 = accurate, 0 = inaccurate). However, a second possible dependent variable is the actual share price offer. Although the economically correct answer is to make no offer ($0/share), it is also the case that lower share price offers can be considered less bad; that is, lower offers will be associated with less of a winner's curse effect. Therefore, we replicated the analyses in Table 3 using share price as the dependent variable. The OLS regression results largely replicate the findings from Table 3. Higher share price offers (a less desirable outcome) are associated with respondents who were more impulsive, more confident, more skeptical of expert opinions, and accessed fewer of the experts.

Hypothesis 4 proposed that after making a poor decision (getting the wrong answer), narcissists would be more likely than non-narcissists to externalize the blame for their failure. To test this, we first restricted the sample to include only those respondents who had made an inaccurate decision (N = 225). We then regressed narcissism on the post-decision measure of blame, controlling for the demographic variables in previous analyses. The coefficient for narcissism was positive and significant ($\beta = 0.11$, p < .05), indicating that after getting the wrong answer, narcissists were more likely than non-narcissists to place blame for their decision on external factors.

Finally, hypothesis 5 proposed that narcissists would remain more confident after making a poor decision than non-narcissists. Again, we restricted the sample to include only those subjects who had made an inaccurate decision (N = 225). We tested this in two ways. First, after controlling for demographic variables we regressed narcissism on the measure of post-decision confidence. The coefficient was positive and significant ($\beta = 0.06$, p < .01), indicating that even after making a

bad decision, narcissists remained more confident than non-narcissists. As a second test, we reran the same model but added pre-decision confidence in as a control variable. Again, the coefficient for narcissism was positive and marginally significant ($\beta = 0.03$, p < .10), indicating that narcissists remained more confident than non-narcissists even after controlling for initial levels of self-confidence.

2.2.7. Discussion

The results confirmed that narcissists were more confident, saw experts as less useful, and were more impulsive than non-narcissists. These attributes, which, in part, define grandiose narcissism, were, in turn, associated with the probability of making a poor decision (Fig. 1). Respondents who were more confident and saw experts as less useful were also more likely than those lower on these dimensions to make an incorrect choice. It was not narcissism per se that led to the increased probability of making an incorrect choice but the effects of narcissism on how respondents accessed information. Having made an incorrect decision, narcissists were also shown to be more likely to externalize the blame for their decision and to remain confident even after having made an incorrect choice.

2.3. Study 2

2.3.1. Research design

To further explore the effects of narcissism on decision accuracy, we used a variant of the Judge-Advisor experimental paradigm (e.g., Rader et al., 2017). Participants were asked to provide their estimates of the dates of 10 historical events from American history (Appendix 1). They were then shown the responses from an "expert," described as a graduate student in history. They were then given the opportunity to modify their answers. The dates provided by the graduate student (the Advisor) were accurate answers. Therefore, to the extent that the respondent (the Judge) used these answers to adjust their initial estimates, it would increase the accuracy of their answers. Advice taking can be assessed by noting the degree to which a respondent adjusts his/her initial estimate based on the advice from the expert.
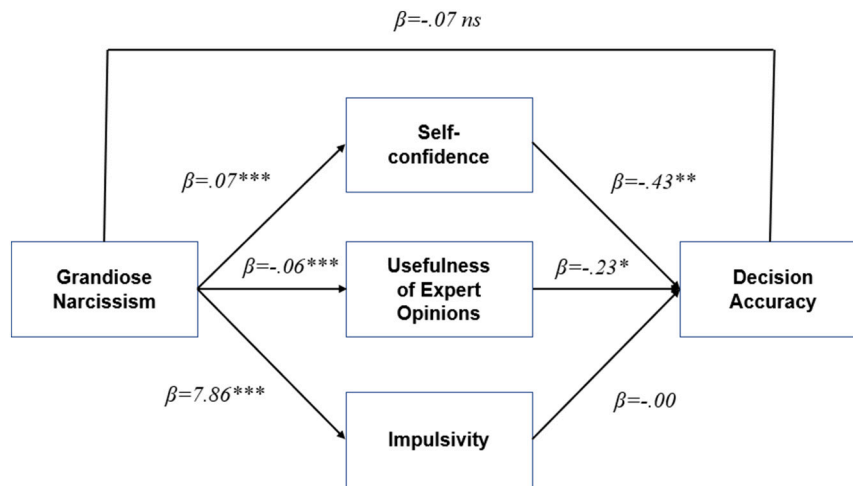
Fig. 1. Final model. Study 1.

2.3.2. Participants

Two hundred fifty-three subjects were initially recruited from mTurk and paid $1.20 for their participation. We screened subjects so that all who participated in the study resided in the U.S. and spoke English as their first language. Subjects were required to complete several attention check questions throughout the scenario, and were prevented from participating in the study more than once. Four respondents were dropped based on the attention check questions. We also monitored the amount of time that subjects took to complete the scenario study ($M = 9.6$ min, $SD = 4.1$ min). Of the 249 participants, 59% were male and the average age was 39.6. Seventy-three percent were Caucasian, 5% were African-American, 13% were Asian-American, 1% were Pacific Islanders, 4% were Hispanic, 2% were Native Americans, and 2% were other. For analysis, we coded as non-white both African Americans and "other" (7%). Average annual income was between $40,000–$60,000. Ninety-six percent of the respondents had at least a college education and 25% had a graduate degree.

2.3.3. Independent variables

2.3.3.1. Narcissism. As in the first study, narcissism was assessed using the 16-item Narcissistic Personality Inventory (NPI-16; Ames et al., 2006).

2.3.3.2. Overconfidence. Prior to providing answers to the 10 questions, participants were asked two questions assessing their level of confidence that their estimates would be correct. The first item was "How confident are you that your estimates will be correct?" (using a 7-point response scale from "not at all confident" to "completely confident"). The second item asked "How accurate do you think your answer will be compared to other participants?" (using 7-point response scale from "much less accurate" to "much more accurate"). These two items were highly correlated ($r = 0.66$, $p < .001$) and combined to form a measure of pre-decision confidence.

After providing their final estimates of the historical dates, respondents were again asked how confident they were in their decisions using the same two items. Again, the two items were highly correlated ($r = 0.46$, $p < .001$) and combined to form an index of post-decision confidence.

2.3.3.3. Expert advice. Prior to providing their estimates, participants were asked the following question: "When making difficult decisions, how useful do you find referencing expert opinions to help you make those decisions?" (using 7-point scale from "extremely useless" to "extremely useful").

2.3.3.4. Impulsivity. In the first study, impulsivity was measured indirectly as the total time each respondent spent on reading the

scenarios. In this study, impulsivity, defined as a basic dimension of temperament and reflecting a preference for immediate reward (Caswell et al., 2015), was assessed using the short version of the Barratt Impulsiveness Scale (Steinberg et al., 2013). This is a well-validated version of the longer instrument, considered to be the gold standard measure of impulse control (Reise et al., 2013; Stanford et al., 2009). It contains eight items such as "I am self-controlled" and "I act on the spur of the moment." Respondents indicated on a 5-point scale from "rarely/never" to "always how I typically behave" (Cronbach's $a = 0.76$).

2.3.4. Dependent variables

2.3.4.1. Decision accuracy. Respondents provided initial and final estimates for 10 dates in U.S. History. In the Judge-Advisor paradigm, there are two ways to assess the extent to which a respondent uses the advice of an expert (Bonaccio & Dalal, 2006; Gino, 2008). First, one can compute a measure of the weight of advice (WOA). The WOA is the absolute value of the difference between the judge's final estimate and the initial estimate divided by the absolute value of the difference between the advice and the initial estimate. This is calculated according to the following formula:

$$WOA = \frac{[\text{judge final estimate} - \text{judge initial estimate}]}{[\text{advisor recommendation} - \text{judge initial estimate}]}$$

A value of zero indicates that the advice had no influence on the final estimate while a value of 1 indicates that the final estimate was identical to the advice. Values in between indicates the degree to which the advice was used. Unfortunately, as Bonaccio and Dalal (2006) observe, this formula suffers from potential problems of undefined or ambiguous values common to difference scores. For example, if the judge's initial estimate is equal to the advice received (the denominator in the equation), the value of WOA is undefined (division by zero). This weakness is particularly acute in a study like the current one where there is a precise numerical answer for a question. Since almost every respondent got at least one or two initial estimates correct, this resulted in the WOA calculation being unusable.[2] Therefore, we compute a second measure of advice taking by subtracting the number of correct answers in the initial estimate from the correct answers in the final estimate. Since the advisor

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[2] A further complication was that it became apparent after collecting the data that a significant number of respondents checked for the correct answers online before providing their initial estimates. This was obvious for two reasons. First, 49 participants got all or almost all dates correct for their first estimate. Second, by doing this, participants provided the same incorrect answer for one of the dates – the first answer that shows up in a Google search, indicating that they had searched for the answer. Therefore, we eliminated these respondents from the sample.

Table 4
Study 2. Means, standard deviations, and correlations.

		1	2	3	4	5	6	7	8	9	10	11	12
1	Narcissism - NPI-16	1.0											
2	Age	−0.12	1.0										
3	Gender (1 = male 0 = female)	0.04	0.06	1.0									
4	Race (1 = white 0 = nonwhite)	0.04	0.01	0.02	1.0								
5	Income	0.06	−0.02	−0.12	0.02	1.0							
6	Education	−0.01	−0.14**	−0.05	0.05	−0.12*	2.51						
7	Impulsivity (time in seconds)	−0.04	−0.10	−0.06	−0.01	−0.01	−0.05	1.0					
8	Confidence (pre)	0.41**	0.08	−0.01	0.07	0.10	−0.02	−0.20***	1.0				
9	Confidence (post)	0.13*	−0.01	0.01	−0.15**	0.02	−0.05	−0.21***	0.17**	1.0			
10	Experts useful	−0.13*	0.03	−0.03	−0.04	0.09	0.13*	−0.17**	0.08	−0.08	1.0		
11	Blame	0.12	−0.16**	−0.03	0.03	0.01	−0.05	0.24***	0.04	−0.22***	−0.16**	1.0	
12	Change in correct answer	−0.13*	−0.12	0.03	−0.08	−0.07	0.12	0.10	−0.25***	0.21***	0.00	−0.16**	1.0
	Mean	4.21	39.6	0.64	0.93	3.37	2.51	15.5	4.09	3.64	5.93	1.77	2.43
	Standard deviation	3.79	11.2	0.7725	0.25	1.98	0.94	4.36	1.11	1.19	1.02	0.99	2.65

* p < .10.
** p < .05.
*** p < .01.

Table 5
- Study 2. Regressions of narcissism on confidence, impulsivity, and use of experts.

		Confidence	Impulsivity	Experts useful
		Model 1	Model 2	Model 3
		β	β	β
1	Age	0.01	−0.04	0.00
		(0.01)	(0.03)	(0.01)
2	Gender	−0.01	−0.57	−0.02
		(0.17)	(0.64)	(0.15)
3	Race	0.38	−0.18	−0.22
		(0.38)	(1.50)	(0.35)
4	Income	0.05	−0.06	0.05
		(0.04)	(0.16)	(0.04)
5	Education	−0.00	−0.30	−0.04
		(0.09)	(0.34)	(0.08)
8	Narcissism (NPI-16)	0.12***	−0.05	−0.04**
		(0.02)	(0.08)	(0.02)
	F-ratio	7.76***	0.61	1.57*
	df	193	193	193
	Adjusted R squared	0.17	−0.00	0.02

(1-tailed tests).
* p < .10.
** p < .05.
*** p < .01

provided correct answers for all 10 questions, this difference represents the extent to which the respondent took the advice of the expert (initial estimate range 0–3 correct answers, $M = 0.51$, $SD = 0.84$; final estimate range 0–10, $M = 2.65$, $SD = 2.75$).

2.3.4.2. Post-decision blame. To assess the respondents' tendency to externalize responsibility for making a bad decision, we used the same two post-answer questions as Study 1: (1) I was distracted by my environment; and (2) There was too much to read. Responses were on a 7-point scale from "strongly disagree" to "strongly agree." The items were correlated ($r = 0.49$, $p < .001$) and were summed as an index assessing blame.

2.3.5. Control variables

We used the same control variables as in Study 1: age, sex (1 = male, 0 = female), race (1 = white, 0 = non-white), income (1 = $20,000 or less, 11 = more than $200,000), and education (1 = graduate or professional degree, 2 = some graduate training, 3 = college degree, 4 = some college, 5 = high school).

2.3.6. Results

Table 4 reports the means, standard deviations and correlations among the variables. These results largely restate those reported in the first study. Narcissism is positively related to confidence (both pre and post), and negatively associated with trust in expert opinions. Narcissism is also negatively related to the dependent variable (change in estimates after receiving the expert advice), suggesting that more narcissistic respondents do not use the advice to improve the accuracy of their answers. Interestingly, confidence is also negatively related to more accurate answers, suggesting that those who are more confident before providing estimates are less likely to heed the advice of the expert.

As with Study 1, hypotheses 1a, 2a, and 3a were tested by using OLS and regressing narcissism on confidence, belief in the usefulness of expert advice, and impulsivity. Table 5 reports these results and confirms hypotheses 1a and 3a. After controlling for age, sex, race, income and education, narcissism is positively associated with pre-decision confidence ($\beta = 0.12$, $p < .001$) and negatively associated with a belief that expert opinions are useful ($\beta = -0.04$, $p < .05$) but not significantly related to impulsivity. As predicted, those higher in narcissism expressed more confidence in the accuracy of their decision and regarded expert opinions as less useful.

Hypotheses 1b, 2b, and 3b proposed that overconfidence, skepticism about experts, and impulsivity would be negatively associated with decision accuracy. Table 6 reports the OLS regression results testing these hypotheses for decision accuracy (How accurate was the respondent's final estimates?). Model 1 shows that absent confidence, skepticism about experts, and impulsivity, narcissism is negatively associated with decision accuracy ($\beta = -0.09$, $p < .05$). More narcissistic participants are less likely to adjust their initial estimates and thereby get a less accurate answer. This finding becomes insignificant when the mediating variables are added (model 6).

The results in models 2, 5 and 6 offer strong support hypothesis 1b, showing that pre-decision confidence is negatively associated with decision accuracy (model 2, $\beta = -0.56$, $p < .01$); that is, more confident respondents were less likely to adjust their estimates and had fewer correct answers. There was little support for the other hypotheses, although in model 6 skepticism about experts was, as predicted, negatively associated with decision accuracy ($\beta = -0.26$, $p < .10$). Overall, these results are consistent with those of Study 1, albeit weaker.

Hypothesis 4 proposed that after making a poor decision, narcissists would be more likely to blame external factors than non-narcissists. Hypothesis 5 suggested that even after making a bad decision, narcissists would remain confident in their judgment. Study 1 provided a

Table 6

– Study 2. Regressions: Dependent variable is accuracy of final answer.

		Model 1 β	Model 2 β	Model 3 β	Model 4 β	Model 5 β	Model 6 β
1	Age	−0.03	−0.03	−0.03	−0.03	−0.03	−0.03
		(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
2	Gender	0.18	0.18	0.18	0.18	0.18	0.18
		(0.39)	(0.39)	(0.39)	(0.39)	(0.39)	(0.39)
3	Race	−1.11	−1.11	−1.11	−1.11	−1.11	−1.11
		(0.92)	(0.92)	(0.92)	(0.92)	(0.92)	(0.92)
4	Income	−0.07	−0.07	−0.07	−0.07	−0.07	−0.07
		(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
5	Education	0.31	0.31	0.31	0.31	0.31	0.31
		(0.20)	(0.20)	(0.20)	(0.20)	(0.20)	(0.20)
6	Confidence	–	−0.56***	–	–	−0.53***	−0.42**
			(0.17)			(0.17)	(0.25)
7	Impulsivity	–	–	0.05	–	−0.04	−0.00
				(0.04)		(0.04)	(0.00)
8	Experts useful	–	–	–	−0.03	−0.05	−0.26*
					(0.19)	(0.18)	(0.16)
9	Narcissism (NPI-16)	−0.09**	–	–	–	–	−0.03
		(0.05)					(0.06)
	F-ratio	1.81*	3.15***	1.20	1.55	2.44***	2.19**
	df	193	193	193	193	193	190
	Adjusted R-squared	0.02	0.06	0.01	0.02	0.06	0.05

(1-tailed test).

* $p < .10$.
** $p < .05$.
*** $p < .01$.

direct test of these after participants made an incorrect decision and were told that they were wrong. This study can offer only a weak test of these hypotheses since respondents weren't provided with direct feedback about the accuracy of their decisions. For hypothesis 4, the OLS regression of narcissism on blame revealed that the coefficient for narcissism was positive and marginally significant ($\beta = 0.03$, $p < .10$), indicating that narcissists were more likely than non-narcissists to offer excuses for their performance (e.g., "I was distracted by my environment"). Hypothesis 5 proposed that narcissists would remain more confident after making an inaccurate decision than non-narcissists. After controlling for the demographic variables and regressing narcissism on the measure of post-decision confidence, the coefficient was not significant ($\beta = 0.02$, ns).

2.3.7. Discussion

Overall, the results of Study 2 are broadly consistent with Study 1. More narcissistic participants are more confident and more skeptical of the opinions of experts than those who are less narcissistic. The results in model 1 of Table 6 also show that more narcissistic subjects are less likely to reach an accurate decision, but this result is mediated by self-confidence and skepticism about expert advice. Respondents who are more confident are less likely to adjust their initial estimates when given advice by an expert and thereby make less accurate decisions. Independent of this, skepticism about experts is also associated with less willingness to adjust the initial estimate which also results in a less accurate decision. We found no effect for impulsivity on decision accuracy. More narcissistic participants were also more likely to externalize blame for their decision making.

3. General discussion

Substantial empirical research has helped document the defining attributes of grandiose narcissism, including overconfidence, impulsivity, a willingness to ignore expert advice, and externalizing blame for poor decisions. Field studies have linked these characteristics to a variety of organizational outcomes (e.g., Grijalva, Newman et al., 2015; Grijalva, Hams et al., 2015; Landay et al., 2019). Unfortunately, these

cross-sectional studies cannot establish causality or explicate the underlying causal mechanisms. Although previous research has suggested that narcissists' need to dominate and overconfidence in their own abilities could have negative effects on decision making (Brunell & Buelow, 2017; Chatterjee & Pollock, 2017), research has not explored how this might occur. The present study offers some insight into how and why narcissists might be more likely to make poor decisions than non-narcissists.

Overall, the results of the two studies show that grandiose narcissists have higher levels of confidence, are more skeptical of experts, and are somewhat more impulsive than non-narcissists. These characteristics, in turn, lead them to pay less attention to the advice of experts and to make less accurate decisions. After making a poor decision, grandiose narcissists are also shown to remain more confident than non-narcissists and to be more likely to externalize blame.

There are several potential weaknesses with the current research. First is the reliance on simple scenarios and online samples. While this is true, we believe that online studies may have important implications for understanding the role of narcissists in the real world. First, the participants in these studies were college-educated adults, most with substantial work and managerial experience. Unlike inexperienced college students, their responses may reflect how they behave in organizational settings (Paolacci et al., 2010; Paolacci & Chandler, 2014). Second, as Bonaccio and Dalal (2006) note, comparatively small effects of the type documented here can accumulate over time. Making a series of small poor decisions can aggregate to a much larger mistake. Further, simple laboratory tasks like the ones used here, may lead to an underestimate of the effects on advice taking and subsequent real-world decision making. A final potential limitation is that the sample consists solely of U.S. respondents. Although a number of studies of the effects of narcissism have been found to be reliable across national contexts (e.g., Oesterle et al., 2016; Spurk et al., 2016), it could be that the effects reported here might vary across national cultures and replication is called for before generalizing too broadly. For example, Foster et al. (2003) report that narcissism is higher in the U.S. than in other countries and Gnambs and Appel (2018) reported stronger effects for narcissism in lower power-distant cultures (e.g. Western cultures).

This is important because once in positions of authority, grandiose narcissists have also been found to make riskier decisions and jeopardize their institutions (O'Reilly & Chatman, 2020). The results here may help explain why this happens. A decision maker who is overly confident in their own abilities, who makes impulsive decisions, and who does not value the advice of experts is likely to make bad decisions. These tendencies make them potentially dangerous as leaders when their decisions can affect the lives and livelihoods of others. However, previous research has suggested that these same attributes (e.g., fast decision-making, overconfidence) could be useful during times of crisis when no definitive information is available (e.g., Maccoby, 2007).

It is worth noting that while an impressive body of research has documented the defining characteristics of grandiose narcissists, comparatively little has examined how these dispositions affect decision making. Interestingly, our results may explain the lack of association between narcissism and decision making reported by Brunell and Buelow (2017). In that study, the researchers investigated the association of narcissism and decision-making performance in three gambling tasks and concluded that "the association between narcissism and decision making was tenuous (2017, p. 12)." Although the researchers explicitly characterized narcissists as overconfident, impulsive, and risk taking, the study focused on the direct association between narcissism and decision-making performance but did not consider the mediating effects of overconfidence and impulsivity. Our results from study 1 also show no direct link between respondent narcissism and decision making but do find strong effects for the other variables (the components of grandiose narcissism). The results from study 2 (Table 6, model 1) does show that narcissism is negatively associated with decision accuracy, but this effect falls away when the mediating variables are added. These findings are also consistent with previous research showing that grandiose narcissists discount the advice of experts (Kausel et al., 2015; Kong, 2015).

In this regard, the results reported here are also consistent with those found in field studies. For instance, results from study 1 show that respondents who were more confident, impulsive and valued expert opinions less tended to offer a higher share price—that is, overpay more. This finding is consistent with the results of a finance study by Atkas et al. (2016). Chatterjee and Hambrick (2011) report similar results. Overconfidence and a willingness to ignore expert advice has also been found to be associated with poor investment decisions (e.g., Malmendier & Tate, 2005) and an increased likelihood of accounting irregularities (Amernic & Craig, 2010; Rijsenbilt & Commandeur, 2013).

The results reported here may also be useful for studies of advice taking. Schultze et al. (2017) noted that "We know rather little about individual differences in advice taking (p. 430)," and that it is "important to investigate which individuals are more or less likely to heed advice…and whether it is likely to hurt them (p. 444)." In a complex world, no single decision maker is likely to be sufficiently knowledgeable to make a good decision without the advice of experts. New technologies and social networks make it possible to access expert opinions for industries as diverse as medicine, finance, science and business. But the availability of expert advice does not guarantee that decision makers will use it (e.g., Reyt et al., 2016). The results of the present study and previous research suggests that providing a narcissistic decision maker with expert advice is unlikely to affect their choices.

Finally, more current examples of these effects can be seen in the current political sphere. Several studies have noted that President Donald Trump scores very high on narcissism (Malkin, 2017; Nai and Maier, 2018; Visser et al., 2017). Two *New York Times* journalists who cover the President and the White House commented on why the U.S government was unprepared for the COVID-19 outbreak. They noted that Trump's "profound need for personal praise, the propensity to blame others, the penchant for rewriting history, the lack of human empathy, the disregard for expertise, the distortion of facts, the

impatience with scrutiny or criticism" were at the root of the problem (Baker & Haberman, 2020). The issue was not a lack of information but his overconfidence in his own abilities, his unwillingness to listen to experts, and to his impulsive decision making.

CRediT authorship contribution statement

Charles A. O'Reilly: Conceptualization, Formal analysis, Methodology, Writing - original draft, Writing - review & editing. **Nicholas Hall:** Conceptualization, Formal analysis, Methodology, Writing - original draft, Writing - review & editing.

Appendix 1

Questions about U.S. history used in Study 2.

___1. In what year was Louisiana purchased by the U.S. from France?

___2. In what year was the first U.S. satellite placed in orbit?

___3. When did Texas declare its independence from Mexico (the Battle of the Alamo)?

___4. In what year did Congress first approve the Presidential Succession Act?

___5. In what year was the first transcontinental railroad completed?

___6. In what year did women in the U.S. get the right to vote (the 19th Amendment)?

__7. In what year was Russia purchased by the U.S. from Russia?

___8. In what year was the Cuban Missile crisis?

___9. In what year was NATO formed?

__10. In what year was the Bill of Rights approved?

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