

The 470th Convocation

Address: "The Risks and Rewards of Irrational Thinking"

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Only a handful of years ago, you were at the threshold of the passage you complete here today. As you stood at that threshold, scientists in Scotland announced the cloning of a sheep named Dolly, the Mars Pathfinder landed and began sending back spectacular pictures of the Martian landscape, and Britain still mourned the death of Princess Diana. The airlines were flying high, and the World Trade Center was standing tall. Peace was achieved in Northern Ireland, and the biggest problem facing the White House was the articles of impeachment approved by the U.S. House of Representatives accusing the president of perjury and obstruction of justice. The world then was a very different place than it is now.

Or was it?

As you stood at the threshold of your studies here, little progress was being made in peace negotiations between Israelis and Palestinians as settlement construction and suicide bombings offset Washington's diplomatic prodding. Huge explosions were detonated within minutes of each other outside U.S. embassies in Kenya and Tanzania, killing hundreds of people and wounding thousands more. Osama Bin Laden and Al-Qaeda were thought to be behind the attacks, and Americans were awakened to the risk of terrorism. The world economies were faltering, and although the U.S. stock markets were riding high, there was uneasiness about potentially inflated balance sheets and stock prices. The world in fact was very much the same then as now.

As this example illustrates, people often make a case for whatever position they expect or wish to be true. The world is seldom simple, and people have limited information-processing capacities. Because there is more information than people can possibly process, people tend to search for and attend to evidence that confirms what they already believe to be true. This ubiquitous feature of human cognition is called the *confirmatory bias*, and its presence should

serve as an alert that neither your capacity to make a cogent argument for a position nor your level of confidence in its truth makes it so.

Even as a graduate of the University of Chicago, you will occasionally fall victim to errors in thinking and decision making. Yes, you should make them less often and less egregiously than those less educated and intelligent than you. But we all fall victim to the subtle errors of social cognition—errors that are nonrandom.

You may be sitting there thinking, “I need no forewarning. I’ve mastered the logic of reasoning, preferences, and decision making.”

- Why, then, is it that you regret more missing an airline flight by a minute than missing one by an hour?
- Why do acts of terrorism, which logically only nominally alter your odds of harm, so dramatically increase your and the nation’s anxiety?
- Why do you feel better when you crawl out of bed to go to the doctor, and he or she tells you that you’re still sick rather than that your recovery is progressing well?
- Why do people sometimes act in a fashion that pushes away the very people with whom they most want to be close?
- Why on earth are you happier to meet another alum from your university in a distant airport than in a nearby store?
- Why are you happier when you go from doing badly to doing well at the task rather than doing well from the very beginning?
- And why do you feel greater satisfaction when you have had to work hard to achieve something—like your degree from the University of Chicago—than when the

achievement came easily?

If any of the above described how you have felt then you are normal, for these are all well-documented biases in how people think.

Unusual or exceptional events—such as missing an important airline flight by a single minute—lead people to imagine alternatives that are normal, and consequently dissimilar to the actual outcome. This process is called *counterfactual reasoning* and it can produce some surprising effects on preferences and reasoning. For instance, silver medalists in the Olympic Games are less happy with their achievement than are bronze medalists. The counterfactuals that silver medalists face, having just missed the gold medal, are haunting. Similarly, most people are much more tormented by what they *should* have done when they miss that important flight by a narrow rather than by a wide margin.

Counterfactuals are a form of *mental simulation*—an enormously important capacity that allows us to consider alternative actions and to think through their likely consequences without having to have previously performed the action. However, the ease with which certain endings come to mind influences what people judge is likely to happen. People who watch a great deal of television, for instance, also tend to be more fearful of being victimized by crime— an effect that remains even after controlling for their actual risk of being victimized. Their repeated exposure to people on TV being victimized makes the thought more accessible that they, too, could be victimized while going about their normal life. This inference, which reflects the operation of the *accessibility heuristic* in human reasoning, then affects their prediction of outcomes, causality, and affective responses. Terrorists prey on this feature of human reasoning.

Causal reasoning is generally a rational process but it is characterized by systematic biases. When you enter a job and a new co-worker tells you that the boss is hostile, you may wonder whether the boss is hostile or your co-worker has an agenda. If this co-worker describes only the boss as hostile, however, and does so consistently over time, and if others who know the boss at work and at home also describe the boss as hostile, then the co-worker's assertion would have passed three tests—high distinctiveness (only the boss is described as hostile), high consistency

(the boss is characterized as hostile over time), and high consensus (everyone agrees the boss is hostile). Accordingly, you would become confident that the boss was indeed a hostile person. In other words, the process of daily causal attributions shares commonalities with the causal reasoning used by scientists.

But considerable research has also revealed several prominent and systematic biases in the ways we make causal attributions. One such bias, termed the *fundamental attribution error*, specifies that we are more likely to attribute another person's behaviors to something about them than to the situation in which you find them. Given I am speaking to you today, you are more likely to think that I am someone who seeks the limelight rather than a shy person who is here at the bidding of President Randel.

A related effect, called the *actor-observer bias*, refers to the fact that we tend to explain our own behavior in terms of situational forces but the behavior of others in terms of their general dispositions. If you fail to meet a new friend at an agreed-upon time, you are likely to explain this away in terms of external forces—such as your being detained by an important phone call. If, however, a new friend fails to meet you at the agreed-upon time, you are more likely to interpret this in terms of an enduring characteristic of that person such as irresponsibility. The actor-observer bias is also operating when you attribute your own aggressive driving to the traffic congestion in Chicago but that of others to their craziness.

You might think that consulting with others—such as your classmates from the University of Chicago—would provide a cure for these biases in human reasoning. If others agree with a member's proposals, especially if the others are trusted and known for their intelligence, then certainly this should produce some protection against systematic errors in human reasoning and problem solving. As plausible as this might sound, these are precisely the conditions that create *other* systematic biases in reasoning. These biases, which fall under the rubric of *groupthink*, are especially likely when persons working together respect the intelligence and wisdom of each other and form a highly cohesive group with high morale. These conditions create the belief that the group's judgment is infallible. Consequently, the individuals in the group subtly begin to dismiss contrary views and to reject anyone who dares to dissent from the majority judgment.

The effects can be disastrous. Individual members in such a group become less likely to exhaustively survey alternative possibilities and less likely to fully examine the risks of the group's preferred options. Accordingly, they become *more* likely to adopt confirmatory biases when evaluating information, searching out and weighting evidence that confirms what the group already believes to be true. The U.S. government's lack of response to information concerning a forthcoming Japanese attack on Pearl Harbor in 1941, the decisions that led to the disastrous invasion of Cuba at the Bay of Pigs in 1961, and the dismissal of information about a possible terrorist attack involving commercial airliners in 2001 all have the earmarks of groupthink.

A less obvious but no less important consequence of the nuances of social cognition is that you have much more influence in the creation of your lives and social relationships than you might realize. If you believe a new acquaintance is fun and nice, you behave in a fashion that draws out pleasant and enjoyable behaviors from the person. If you think a child is intelligent, you do and say things that contribute to the child becoming smarter than he or she would be if you thought the child was of more normal intelligence. When people think they will fail at an important task, they sometimes self-handicap. By subtly producing insurmountable obstacles to success, they can attribute their subsequent failure to these obstacles rather than to themselves. In each of these instances, the individuals are totally oblivious to the fact that *they* were the architects of their own social realities.

Remember the power of *self-fulfilling prophecies* when you are feeling sorry about the lot life has given you or you are feeling your successes are merely the result of good fortune.

I congratulate you on the accomplishments we celebrate here today, and I am confident that this will be followed by many more achievements, both personal and professional, in the years to come. Perhaps by knowing about some of these biases you will be better able to avoid their ill effects and to appreciate the power of your mind in the construction of your life, achievements, and social relationships. For centuries we have conceived of human nature as dual: A rational, admirable side versus an emotional, darker side. Aristotle, St. Thomas Aquinas, and Freud all espoused such a view. A more interactive, unified view is now emerging, however. Although I have limited my comments here to some of our cognitive biases and judgmental foibles, I hope

you appreciate that the same irrational processes that at times lead to our downfall are also the foundation of our finest qualities as humans. Hope *requires* irrationality. Positive illusions of your spouse produce longer and happier marriages. Without a biased weighting of the odds, few would begin a new business, run for public office, seek to change society for the better, or support the Chicago Cubs. Simply going by statistics alone, it is irrational for any of you as individuals to assume that you can paint a masterpiece, make a breakthrough in science, or marry for life. And yet I hope you are not all so rational that you avoid putting paint to canvas or a ring on your beloved's finger. For the greatest achievements of humankind come not strictly from rational thought, but from rational thought carefully applied in pursuit of sometimes irrational dreams.

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