

**Some Common Biases and Errors
in Perception and Judgment
and How We Can Guard Against Them**

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Henry O. Patterson, Ph.D.

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Some Common Biases and Errors in Perception and Judgment and How We Can Guard Against Them

Circus promoter P.T. Barnum is credited with the comment, “There’s a sucker born every minute.” The 1961 hit by Brenda Lee asked “Am I Fool Number One” or fool number two? The Grammy nominated R & B hit from 1973 by the Main Ingredient settled the point by concluding “Everybody Plays the Fool.” [*\[Play song\]*](#)

How do these assertions stand up to scientific scrutiny? Are we all chumps to some degree, vulnerable to con men, hucksters, propagandists, advertisers, salespeople, and anyone who manipulates the belief and attitude formation process? Even if only some of us are duped, clearly there is a huge cost to the victim and often to society in general; so how do we explain faulty judgments? Are there common, systematic errors in our thinking that might predispose all of us to becoming suckers? Finally, are there ways of improving our judgment to guard against those who take advantage of us? These are the four questions I will address in this presentation.

I. Are We All Suckers?

If you are a news junkie like me, or even if you just follow the news casually, you see examples almost every day of horrendous crimes perpetrated on

trusting victims. The most infamous crimes leave us in disbelief that people can be so cruel and that the victims and those who know the perpetrators can be so foolish. Let's briefly recap some of these horrific crimes—an *Evil Hall of Fame*-- that most of us would remember, including serial killers, kidnappers, sexual predators, financial scammers, and sports scandals. *[See photos in Appendix A]*

- Gary Ridgway (Green River Killer) - leads the list of serial killers in the U.S.; convicted of murdering 49 (confessed to 71) women and girls in Washington state over an 18-year period; sentenced to life in prison in 2003;
- John Wayne Gacy (Killer Clown) - murdered at least 33 men and teenage boys over his 6-year career in Chicago; he buried his victims under his house; he was executed in 1994;
- Ted Bundy - handsome, very charming serial killer, rapist, and kidnapper confessed to 30 (estimates up to 100) homicides of women and girls in six states over a 4-year period; convicted and executed in 1989;
- Jeffrey Dahmer (Milwaukee Cannibal) - raped, murdered, and dismembered 17 men and boys over a 13-year period; he was murdered in prison in 1994 while serving a life sentence;

- Ariel Castro – kidnapped, imprisoned, and repeatedly raped three women over 10 years in his residence in Cleveland; a bus driver for the Cleveland School District, a religious man, and a bass player in a local band, no one—not his family members, friends, neighbors, or band members--had a clue about his crimes; he died in prison;
- Jerry Sandusky -- renowned Penn State football coach, founder of the Second Mile charity for children, convicted of 45 counts of sexual abuse and sentenced to 60 years in prison; he molested at least 26 boys over a 15-year period without anyone, including his wife and University officials, recognizing that he was a pedophile; costs to Penn State have exceeded \$110 million so far;
- Bernie Madoff – confessed in 2009 to committing the greatest financial fraud in history, maybe as much as \$ 50 billion, over 20 years without any of his famous and wealthy individual and business clients, banks, the SEC, or even his family members knowing that he was running a mammoth Ponzi scheme; he conned and bilked some of the richest, most intelligent, well educated people in the world; sentenced to 150 years in prison;
- Lance Armstrong - megastar cyclist and seven-time Tour de France winner; after year of denials, he finally admitted doping drugs in order

to win his competitions; some have called this scandal the biggest in all sports.

Of course, the list could go on and on. Virtually every day there is a news story of a crime that shocks us and leaves us in disbelief.

My point in recapping these horrendous crimes and deceptions is not to focus on or address the psychopathology or evil of the perpetrators, but to focus on the psychology of the *victims* and all of those who knew, worked with, or interacted with the perpetrators. How is it possible for so many people to be duped? “To err is human,” Alexander Pope reminds us, but it is difficult to think that you or I would make such catastrophic errors in judgment. Certainly these are extreme examples of failed judgments, but don’t we usually think, “had I known these crooks, I never would have been so careless and foolish to be victimized by them or fail to see them as evil people.”

However, in reality, is the psychological process of making judgments about others any different for us than for the victims and acquaintances of these criminals?

We make judgments and form impressions, beliefs, and attitudes every few seconds during our waking hours. In a 16 waking hour day, that could be at least 58,000 judgments—maybe far more. So even with a conservatively estimated error rate of maybe 1%, i.e., 99% accuracy rate, that would be over 500 judgment errors

every day. Actually, studies by Princeton psychologists Janine Willis and Alexander Todorov (2006) have shown that we can judge faces of people in as little as one-tenth of a second, and rate them on attractiveness, trustworthiness, competence, likeability, and aggressiveness. Giving subjects a longer exposure to faces does not significantly change ratings, but does increase the confidence they have in their ratings. So our errors of judgment might range in the thousands each day.

Certainly many of our daily judgment errors are trivial (e.g., I should have known that the broccoli would give me gas, I should have ordered the carrots instead). However, often the consequences of our judgments are enduring. How many times in the past year, 5 years, 10 years, 20 years, or maybe even 40 or 50 years did you make major judgment errors that you regret and for which you are paying dearly today?

If we are honest with ourselves, and remember our past accurately, which research shows that none of us do, we all have to admit that our judgments are often wrong. Sometimes our errors affect only us, sometime others, but in the case of someone in authority or leadership, poor judgment can affect the entire world.

So back to our initial question: are we all suckers and fools? I have come to believe, and I think current research in cognitive and social psychology strongly supports this position, that indeed the human processes involved in making

judgments are regularly subject to major, sometimes catastrophic, distortion and error. Regardless of our age, intellect, education, expertise, sincerity, or confidence in our judgment, we all routinely misjudge people and situations. And as unpleasant as it is to think, *most likely the only major difference* between us and the victims and acquaintances of those in my list of “Evil Hall of Fame,” is luck or fate—or if you are religious, you might say “there but for the grace of God go I.” Not a happy conclusion to draw; certainly humbling.

This takes us to our second question.

II. How Can We Explain Errors in Perception and Judgment?

In his 2011 book *Thinking, Fast and Slow*, Princeton psychologist Daniel Kahneman has summarized the 40 years of research on human judgment and decision making that he and Amos Tversky founded. (Had Tversky not died in 1996, he would have shared the Nobel Prize in Economics with Kahneman—one of only three psychologists to win the Nobel Prize).

Here are some of the major conclusions Kahneman draws from cognitive and social psychology research:

1. The major underlying assumption of social scientists through most of the 20th century was that people are generally rational and logical, and they depart from rationality mostly because of emotions such as anxiety, fear, affection, and hatred. Research has challenged these assumptions by documenting systematic

errors (called biases) in much of human thought. These biases can be traced “to the design of the machinery of cognition rather than to the corruption of thought by emotion” (Kahneman, 2011, p. 8). (Kahneman and Tversky’s findings were especially problematic for traditional economic theory, which has assumed that economic behavior is essentially rational; their work has led to the new field of behavioral economics.)

2. Our thinking can be categorized into two types: fast thinking—called *System 1* thinking (essentially what has traditionally been termed intuition; Freud called it the subconscious); and slow thinking—called *System 2* thinking (traditionally termed logic and reason). Following is a much-abbreviated list (from Kahneman, 2011, p. 105) of qualities of System 1 thinking (in contrast to System 2 thinking) with some simple demonstrations I selected to illustrate some of the concepts. System 1 thinking:

- a) Operates automatically and quickly, with little or no effort, and no sense of voluntary control; [\[Demo # 1 – Spinning Dancer\]](#)
- b) Generates impressions, feelings, and inclinations; when endorsed by System 2, these become beliefs, attitudes, and intentions;
[\[Demo # 2 – Memory quiz—See Appendix B\]](#)

- c) Can be programmed by System 2 to mobilize attention when a pattern is detected; *[Demo # 3—Ambiguous figures—See Appendix C, Figure 1 and Figure 2]*
- d) Executes skilled responses and generates skilled intuitions, after adequate training; *[Demo # 4—Stroop Test]*
- e) Infers and invents causes and intentions; *[Fundamental attribution error discussed later]*
- f) Neglects ambiguity and suppresses doubt; *[We're more confident than we are correct]*
- g) Is biased to believe and confirm *[E.g., confirmation bias discussed later]*; *[Demo # 5—Reading scrambled words—see Appendix D]*
- h) Exaggerates emotional reaction—first impressions (halo effect); *[Discussed later]*
- i) Focuses on existing evidence and ignores absent evidence (WYSIATI—What you see is all there is);
- j) Sometimes substitutes an easier question for a difficult one (heuristics);
- k) Is more sensitive to changes than to states; *[Demo # 6—Hidden Bird]*

- l) Responds more strongly to losses than to gains (loss aversion);
- m) Frames decision problems narrowly, in isolation from one another. [*Thinking is compartmentalized*]

So essentially, our subconscious thought processes make our decisions; we often act on the bases of those decisions, then we become aware of what we did and attempt to explain our actions rationally. Brain scientist George Miller summarized it well: “It is the result of thinking, not the process of thinking that appears spontaneously in consciousness” (Miller, 1962, p. 56).

3. It is very easy for the brain to become totally overwhelmed, which would mean shutting down our processing system and becoming immobile, so short-cut strategies called *heuristics* (rules of thumb) have evolved in System 1 thinking. These heuristics operate quickly and automatically so our brain is free to deal with complex issues and situations that require concentration and conscious analysis. The brain is a *miser*, so it has a bias for simple problems that do not require complexity. Moreover, it is very clear that we cannot attend to two tasks simultaneously (e.g., the Spinning Dancer). For example, when we are driving a car, we are in automatic mode with System 1, so complex tasks such as texting at the same time can cause our system to overload, and an automobile accident can easily occur.

4. Many people consider our intuition (i.e., System 1 thinking) to be magical or sometimes paranormal. Psychics promote their extraordinary intuition powers as a unique gift that allows them to communicate with the departed or to predict the future. The more likely explanation is that we all have similar intuitive abilities. Herbert Simon of Carnegie Mellon University, who won a Nobel Prize in 1978, and who for years researched the phenomenon of expertise, declared that “intuition is nothing more or nothing less than recognition” (Simon, 1992, p. 155). Furthermore, it is clear that even the expert’s intuition is affected by emotion and mood as well as complexity. System 1 heuristics prefer simple questions to complex ones. So your stock broker might have answered your question about investing your million dollar windfall in derivatives by saying, “That’s a very complex field that I don’t fully understand, but Bernie Madoff is a really smart and accomplished guy—former President of NASDAQ, he understands them, so let’s just invest in his firm.”

5. Finally, although the System 1 heuristics result in many errors in judgment, these errors get compounded and exacerbated by what Kahneman says is a “puzzling limitation of our mind: our excessive confidence in what we believe we know, and our apparent inability to acknowledge the full extent of our ignorance and uncertainty of the world we live in. We are prone to overestimate how much we understand about the world and to underestimate the role of chance

in events. Overconfidence is fed by the illusory certainty of hindsight” (Kahneman, 2011, p. 14).

So to return to our second question, how can we explain the errors in judgment that can make us suckers and fools? The explanation is our heavy reliance on our automatic, intuitive, mostly uncontrollable System 1 thinking. In order not to overload our brain, we have to rely on our intuition, but the cost is often a distortion of reality and biased judgments, and we often fail to engage our System 2 thinking as a check on our intuition errors.

This takes us to our third question.

III. Are There Common, Systematic Errors in our Thinking?

As you likely have already surmised from the previous discussion, the answer is indeed yes, scientists have discovered many common errors in System 1 thinking. We are highly prone to very predictable mistakes, which researchers call cognitive errors or bias.

In addition to Kahneman, many other cognitive and social psychologists, as well as psychologists and economists in the new field of behavioral economics, have identified scores of these biases. Here are some recent books that discuss cognitive errors and biases.

- *Predictably Irrational: The Hidden Forces That Shape Our Decisions* (Rev. ed.) (2009) by psychologist and behavioral economist Dan Ariely (*New York Times* bestseller);
- *The Black Swan: The Impact of the Highly Improbable* (2010) by Nassim Nicholas Taleb (*New York Times* bestseller);
- *Intuition: It's Powers and Perils* (2002) by social psychologist David Myers;
- *The Believing Brain* (2011) by Michael Shermer;
- *You Are Not So Smart* (2011) by journalist David McRaney-- a short, readable summary of some 48 biases.

If you check Wikipedia under “cognitive biases,” there are a total of 172 separate biases listed: 94 “decision-making, belief, and behavior biases,” 26 “social biases,” and 52 “memory errors and biases.” Given that research in this field is just beginning, in the years ahead scientists will likely discover hundreds of thinking errors we make every day.

In our remaining time, I can only touch on a few of these biases, so I have chosen only three closely related cognitive biases to explore: the *halo effect*, the *fundamental attribution error*, and the *confirmation error*. These three seem most implicated in problems we often have in accurately judging duplicitous individuals such as the members of the Evil Hall of Fame.

Three Common and Pervasive Biases and Errors in Judgment

1. Halo Effect. Given that our intuition insists on simplicity and expediency in making judgments about people, one of the heuristics that we frequently use in judging individuals and groups has been called the *halo effect or error*, or it's opposite, the *horns effect or error*. Psychologist Edward Thorndike first identified this well researched concept almost 100 years ago when he noted that when army officers rated their soldiers on a variety of features such as intelligence, leadership, character, and physical conditioning, ratings seemed to cluster together. Superior soldiers seemed to be rated highly on all traits, poor soldiers seemed to be rated poorly on all traits.

The halo or horns effect is the tendency, when making judgments about someone, to develop a generally favorable or unfavorable attitude toward that person based on a single outstanding trait or quality that we notice in the person. Then we allow our positive or negative attitude to permeate all other judgments we might make about that person, i.e, we make inferences about specific traits based on our general impression. In other words, we judge a book by its cover.

I have some personal experiences related to a famous experiment which powerfully illustrates the halo effect (more precisely, the horns effect). In 1973 a social psychologist at Stanford University, David Rosenhan, published a shocking article in the journal *Science* entitled "On Being Sane in Insane Places." (When I was President of the Berks County Mental Health Association, I was fortunate in

hosting Dr. Rosenhan here in Reading—in this very hotel—for a forum based on his work.) Rosenhan wondered how context influenced the diagnosis and treatment of individuals in a mental hospital, and decided to find out by having himself and some of his colleagues admitted to mental hospitals by faking a single symptom, then acting completely normal once in the hospital. Is it possible for staff to perceive normal behavior in someone in a mental hospital after being labeled mentally ill? Or does the horns effect color everyone's judgment of patient behavior, even the experts, so that even normal behavior is seen as abnormal? Rosenhan and all of his associates who became pseudopatients discovered that indeed none of the psychiatrists, psychologists, social workers, and psychiatric nurses--in some of the best mental hospitals across the country—were able to recognize their behavior as being normal in the context of a psychiatric ward.

Once we note some salient quality about a person and make a judgment based on that quality, the halo effect takes over and even experts find it difficult if not impossible to judge that individual in any objective way. It is very difficult to see normality in abnormal contexts, and the labels we place on people color our judgments and affect how we behave toward them.

Most likely, the halo effect played a significant role in why our Evil Hall of Fame members were able to win the confidence of their victims, and why those who thought they knew them were not able to see their evil qualities. One of the

most outstanding traits of sociopaths is their charm—they appear friendly, likeable, often articulate, intelligent, and fun people. The charm halo makes it difficult to see the malevolence hiding underneath.

This same phenomenon occurs when we assume that professionals--priests, doctors, teachers--are honest and honorable, and we are shocked to discover that someone in any of these noble professions might be a pedophile or worse. The halo effect explains why many people believe in the innocence of celebrities such as O.J. Simpson, Jerry Sandusky, or Lance Armstrong despite strong evidence to the contrary.

In his book *The Halo Effect...and Eight Other Business Delusions That Deceive Managers*, business consultant and former Harvard Business School professor Phil Rosenzweig states, “The Halo Effect isn’t the only delusion that distorts our thinking about business. But in many ways the Halo Effect is the most basic delusion of them all. It is a flaw—sometimes compounded by other errors—that turns up again and again, weakening the quality of our data and often diminishing our ability to think clearly about the factors that shape company performance” (Rosenzweig, 2007, p. 64).

2. Fundamental Attribution Error. A great deal of research in social psychology has been done in the field of attribution theory—how we all explain the causes of behavior. In 1958 Fritz Heider published a book *The Psychology of*

Interpersonal Relations in which he showed that in order to make sense of our social world, we are constantly observing and analyzing the behavior of others (as well as ourselves) and attempting to explain why people do what they do. Often our very survival depends on our ability to judge quickly another person to determine if he is dangerous and our safety is threatened. Therefore, in reality, we are *all* psychologists trying to figure out why people act as they do, and we most often attribute behavior to one of two types or categories of explanations: *personal factors* or *situational factors*.

Personal attributions refer to internal, enduring, dispositional characteristics of an individual such as intelligence, personality, mood, and motivation.

Situational attributions refer to factors outside of the person such as social pressures, the activity engaged in, or just happenstance or luck.

The error that we often make has been well researched and documented over the past 40 years. When we explain the behavior of others, we tend to *overestimate* personal, dispositional factors, and *underestimate* situational factors. The busier and more distracted we are, the more we error in our judgments of others.

We have all likely made the fundamental attribution error several times this evening. As a simple example, consider this scenario.

When you arrived tonight, you walked over to the bartender with the weird haircut--his nametag said Biff—to order a drink. He seemed to ignore you and

appeared to be staring off into space. You finally got his attention, but he seemed indifferent, unfriendly, and even rude as he mixed your drink and slammed it on the bar. He seemed to bark “that’ll be \$4.50,” so you paid him, but left no tip. As you walked away a bit disgruntled, you detected Biff saying under his breath “cheapskate.”

Now let us analyze this brief interaction. Your System 1 thinking made an instantaneous judgment of the bartender and assigned to him personality characteristics—being insensitive, ineffective, rude, hostile, i.e., being a jerk. Because personality traits do not change much in a short period, if you see Biff tending the bar next month at our Torch meeting, you will not expect him to act any differently.

So what is the truth about Biff? As a Torch member who is always open-minded, inquisitive, and a seeker of truth (and I am probably displaying the halo effect in thinking of Torch members this way), you decide to find Biff after dinner and discuss what happened.

So is Biff going to explain his own behavior in terms of personal or situational factors? He admits that he might have been rude to you—he barely remembers, but explains that he has just gone through a nasty divorce. Just before he started bartending tonight, he got a call from his lawyer (and he noted, by the way, that you actually look a lot like his lawyer), who gave him the bad news that

he lost his custody battle for his kids, and his ex-wife is moving away with her new boyfriend and the children.” He did not mean to be rude to you. “I’m usually very courteous to customers,” he said, “but guess I was just preoccupied and angry with what my lawyer had told me and took it out on you.”

So Biff’s explanation of his own bad behavior was situational, which is typically how we explain our behavior, especially if the behavior was socially undesirable. When confronted with violating a social norm, we focus on the situation: “the devil made me do it,” or “I had no choice in that situation,” or “I was tired, stressed, distracted, sick, etc.”—all references to the situation.

Actually, both parties made the fundamental attribution error in this vignette: having never met him, you observed indifference and unfriendly behavior, and judged him to have the personality qualities of a jerk, so you did not leave a tip. He noticed that, and judged you to have the personality qualities of a cheapskate.

Name-calling is often an indicator that there is a fundamental attribution error. We are quick to identify personal qualities as explanations for behavior we observe, and we quickly assign a label to that person, e.g. cheap, stupid, idiot, crazy, jerk, loser, lazy, fool, or worse. After experiencing mistreatment by someone, I’ve never heard someone yell in anger “you’re just an unfortunate victim of circumstances!”

The fundamental attribution error is also the basis of typecasting. Actors get typecast by certain roles they play—we assume that they have the personal qualities that they portray on TV or in a movie; we have trouble seeing their behavior as “just acting.” Leonard Nimoy entitled his book *I Am Not Spock* to try to convince people that his real life behavior is different from the famous character he played on Star Trek. But we all get labeled because of the fundamental attribution error, and we all know that a label, e.g., mentally ill, ex-con, whistleblower, can result in prejudice and discrimination.

Moreover, tragically, the fundamental attribution error can get us cheated out of a fortune or even killed, as with the victims of our Evil Hall of Fame. Sexual predators, con artists—sociopaths of all types—often appear to their victims as intelligent, charming, very nice people. Our tendency is to assume these individuals indeed have the personal traits that we observe and that situational factors (they are looking for victims) are not relevant.

Beyond the tragedies that can result from misjudging a predator, what can happen when a powerful person or world leader commits the fundamental attribution error? Remember Neville Chamberlain’s misjudgment of Hitler, or President George W. Bush’s judgment of Russian President Vladimir Putin--after a 2-hour meeting: “I looked the man in the eye. I found him to be very straightforward and trustworthy. We had a very good dialogue. I was able to get a

sense of his soul; a man deeply committed to his country and the best interests of his country” (The White House Press Release, June 16, 2001). Did it not occur to Bush that Putin, former head of the KGB, may have been acting, and in fact is not trustworthy at all?

Exacerbating both the halo bias and the fundamental attribution error is a third bias.

3. Confirmation Bias. Michael Shermer in his book *The Believing Brain*, calls the confirmation bias the “mother of all cognitive biases” (Shermer, 2011, p. 259) because this heuristic is usually involved in other cognitive biases. He defines this well researched bias as “the tendency to seek and find confirmatory evidence in support of already existing beliefs and ignore or reinterpret disconfirming evidence” (p. 259). In doing the mental gymnastics of explaining and justifying our judgments, actions, beliefs, or attitudes, we have a strong bias to search for information and memories that confirm our position, and avoid or ignore information and memories that disconfirm or discredit our judgments.

For example, if I ask you, “How was your dinner this evening?” you would likely give me a quick, simple positive or negative evaluative response.

Your quick thought system (System 1) determined your answer to my question (you indicate that you did not enjoy the dinner), but then I ask, “So explain to me exactly why you did not enjoy your dinner?” Now you must justify

the decision that was not carefully or rationally made. Context is important in your response as well—you must appear to yourself and to me as an intelligent, competent, thoughtful person, and you noticed that a server had heard my question to you and is listening for your answer.

You must now search your entire memory bank for evidence to support your assertion that dinner was not good. Many memories unrelated to those of actually eating dinner would be activated by my question. For example, you might remember a case of severe food poisoning that occurred at a banquet here at the Crowne Plaza, you might remember that your last meal here—similar to tonight's dinner--was served cold, that the service was slow, that the paper that followed dinner was really boring, and that you had to drive home in a thunder storm. Those might have been the salient associations that instantly flooded your System 1 thinking, while positive memories, e.g., a very nice meal last month, did not surface in the memory search.

The point is that our intuitive judgments are not carefully reasoned, but our explanations must appear to be rational and appropriate to the situation. So our seemingly rational answer is the result of a biased confirmation process—we must find evidence in our memory to justify our snap judgment.

Although the confirmation bias can operate on any beliefs, it appears most potent when important beliefs, attitudes, and values are involved: our political

beliefs, our religious beliefs, and our beliefs about close friends and family. For example, if you like President Obama, you probably spend more time watching and listening to politically left-leaning talk radio, cable news channels, op ed columns, blogs and internet sites, and talking to Democrats or left-leaning Independents because they assist you in confirming your political views. If you dislike President Obama, you prefer media sources that feature people who think like you do and dislike the President.

With so many media choices available to us today, we can easily find sources that fit our political beliefs exactly, which means that we rarely ever have to hear or see information that might challenge or threaten our existing beliefs. The confirmation bias certainly facilitates the extreme polarization evident in today's political discourse.

As we have said, the confirmation bias is often combined with other biases. The halo (horns) effect, the fundamental attribution error, and the confirmation bias often work together, and when they do, the chance of errors of judgment are compounded significantly.

So to summarize the answers to our initial questions: yes we are all suckers and fools, the explanation is that our intuition does not always work very well, and there are many dozens of common cognitive errors that can cause us to fall prey to human predators.

So, is there any hope? Is there anything we all can do to minimize error and bias in judgment? Happily, the answer is yes.

IV. Ways of Minimizing Error and Bias

In his book *Intuition: It's Powers and Perils*, David Myers observed, "The history of science is a story of one challenge to our intuition after another" (Myers, 2002, p. 9). The same would seem to apply to our personal search for truth: we should challenge our Type 1 thinking by engaging our Type 2 thinking. We cannot and should not try to stifle totally our intuition; despite many errors, it actually serves us quite well, especially when split second judgments are required. But when we have the luxury of time and distance, we need to initiate our own judiciary system, our own NTSB (National Transportation Safety Board), our own internal panel of critical thinking experts to collect and examine all the data and make a dispassionate, objective evaluation of our intuitive judgments. The result might be that we change our minds if our initial judgments are not supported by subsequent careful reasoning.

This is to say that we need to develop *wisdom*, which I like to define as making good judgments and decisions. Wisdom can only be acquired as a result of logically reflecting on our experiences and those of others (including all the great thinkers throughout history). It is not the same as intelligence, most of which is given to us by our parents' genes interacting with the responsive environment that

we initially grow up in and later create for ourselves. David Myers (2002) reminds us “...wisdom comes from both illusions lost and knowledge gained” (p. 129).

I will end with a few thoughts on how to acquire this wisdom, which I have gathered from many of the sources I have used in preparing this paper as well as reflecting on my own experiences over 65 years. These ideas are not new; indeed, they are suggested or implied by many of the great religions, philosophers, and writers throughout history.

1. Work on developing *humility*--a virtue that every major religion teaches and cognitive science recommends. Accept the reality that “to err is human,” that we regularly make both small and large errors in judgment, and that we have a strong bias to distort reality by ignoring our own mistakes and errors as an unconscious mechanism to enhance our sense of self and our self-esteem. Further, we are all susceptible to manipulation by individuals, groups, and the media with little awareness;
2. Learn to recognize the cognitive biases that operate unconsciously in all of our judgments, especially the halo effect, the fundamental attribution bias, and the confirmation bias. These biases—all self-serving—evolved to keep us safe, but in the process they can trick us into thinking we are correct more often than we are, and that we are more often correct than other people. And remember that memory biases trick us into forgetting, denying, repressing,

and post-rationalizing our mistakes and bad decisions. When it comes to your memory, take Ronald Reagan's advice: "trust but verify";

3. Avoid making major judgments or decisions when in an altered state of consciousness caused by fatigue, sleep deprivation, the influence of alcohol or drugs, illness, extreme emotional arousal such as anxiety, fear, anger, sadness, or mood states such as elation or depression;
4. Slow down the judgment and decision-making process when possible, sleep on it (or pray about it); System 1 thinking is usually improved by System 2 thinking which is slow and deliberate. Putting time and distance between a snap judgment and a decision can dramatically improve the quality of our decisions and actions;
5. Generate as many possible solutions to problems as possible, even writing down the pros and cons of each possible outcome;
6. Reality check with others. Actively solicit and consider the perceptions of others, especially those that have a different perspective than you, those who disagree with you, those who might be more objective in the situation, and those who have expertise on the matter. Although subject to many of the same errors as individual judgment, group perceptions and memory are often superior to those of an individual;

7. Consider the context of judgments. Visual illusions clearly demonstrate that every perception is influenced by the context of the person or event, even to the point that we often cannot see some realities unless the context is altered significantly. It is possible to train oneself to regularly ask, “is this person’s behavior partly or mostly due to the situation rather than personal qualities?”;
8. Do not totally ignore your intuition, your “gut feeling”; consider it as one factor together with logic in reaching a solution. This is especially true if you are an expert or well versed in a field. Experts are as vulnerable to judgment errors as anyone, but usually their intuition is more accurate than the novice—but, only within their sphere of expertise. Don’t fall victim to the halo effect and assume an expert’s advice has any value outside his or her area of expertise; And finally...
9. Come to Torch Club meetings to learn from and be challenged by good thinkers and wise people.

V. Conclusion

With no knowledge of the research of the past 50 years, Barnum’s observation and those pop songs seem to be on the mark: everybody plays the fool. We are all suckers and fools at one time or another—we all distort reality and fall

victim to errors in our intuitive thinking. Even the *Bible* says in Proverbs 28: 26
“He who trusteth in his own heart is a fool.”

But despite all the judgment errors, our brains have evolved to do an amazing job of keeping us in touch with the objective realities of the physical and social world, at least enough to get by. Our very survival as individuals and as a species depends, more often than not, on accurately sensing and perceiving all of the people and things around us and making wise judgments about what to believe and how to act. Moreover, with education, reflection, and effort, we can shape and hone our own thinking processes and reduce the chance of making cognitive errors.

We all misperceive and make poor judgments, but most of us in this room have had the wisdom and good fortune to be correct in enough critical judgments to have lived into our 50s, 60s, 70s, and beyond. Even so, we must remain humble: as your broker will warn you, past performance is no guarantee of future success; and it is probably true that there is no fool like an old fool. Fortunately, there is no age limit on acquiring wisdom and improving our judgment.

So my hope for us all is to grow in wisdom.

Thanks for your attention.

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Web Site

Additional resources related to the topic of this paper, plus information on various related areas of psychology, are posted on my web site:

<http://www.psychology-at-work.org>

Contact Information

You can contact me at <hop1@psu.edu>.

Appendix A

Photos of Evil Hall of Fame



Gary Ridgway (Green River Killer)



Ariel Castro



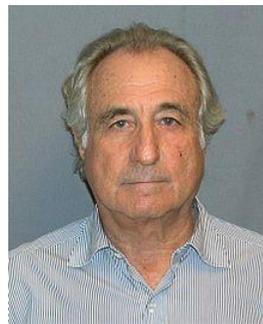
John Wayne Gacy (Killer Clown)



Jerry Sandusky



Ted Bundy



Bernie Madoff



Jeffrey Dahmer (Milwaukee Cannibal)



Lance Armstrong

Appendix B – Part 1

Memory Quiz

Instructions: Study the following 18 words for only about 20 seconds. Try to remember as many as possible. Then proceed to the next page.

- Night
- Dream
- Tired
- Awake
- Rest
- Bed
- Nap
- Sofa
- Blanket
- Slumber
- Sheet
- Alarm
- Comfort
- Pillow
- Awake
- Snooze
- Mattress
- Snore

Appendix B – Part 2

Instructions: Now without referring to the previous list, write down as many words as you can remember from the list. Then proceed to the next page.

- * *
- * *
- * *
- * *
- * *
- * *
- * *
- * *
- * *

Appendix B – Part 3

Did you remember and write the word “sleep” on your list? A large number of people (usually at least 40%) who take this memory test will believe that they remember the word “sleep” as one of the words from the study list. If you go back and look at the actual list, “sleep” was not in the list. This illustrates that our memory process often distorts reality and is strongly influenced by factors we are not aware of such as context and word associations. All of the words on the list can be associated with “sleep,” so we construct our memories based on associative meaning rather than reality.

Appendix C

Ambiguous Figure 1



Do you see a dog?

Appendix C

Ambiguous Figure 2



Do you see a cow?

Appendix D

Reading Scrambled Words

Instructions: Try to read the following sentences. After a few seconds, most people have little trouble reading the words even though most of the letters are scrambled.

I cdnuolt blveiee taht I cluod aulaclty uesdnatnrd waht I was rdgnieg. The phaonmneal pweor of the hmuan mind! Aoccdrnig to a rscheearch sudty at Cmabrigde Uinervtisy, it deosn't mttar in waht oredr the ltteers in a wrod are anrarged, the olny iprmoatnt tihng is taht the frist and lsat ltteer be in the rghit pclae. The rset can be a taotl mses and you can sitll raed it wouthit a porbelm. Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe. Amzanig huh? Yaeh, and I awlyas thought slpeling was ipmorantt!
(unknown source)