Don't Blink: Making "Sound" Decisions

What factors play into the decision-making process?

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In his bestselling book *Blink: The Power of Thinking without Thinking*, Malcolm Gladwell contends that relying on one's intuition or gut feeling not only is a defensible way to make decisions, but can be a preferred way to make decisions. However, nearly 50 years of research on decision making suggests otherwise.

We begin an exploration of effective decision making here, and will continue the discussion in upcoming issues of *School Business Affairs*.

Good Outcome, Good Decision

First, let's clarify the difference between two distinct decision-making constructs that many use interchangeably: *good outcomes* and *good decisions*.

Put simply, a good outcome is a desirable result that follows from making a decision. For example, if all staff members and students arrive at school safely during a snowstorm, that is a good outcome. However, you could have flipped a coin to determine whether to cancel school during that snowstorm (a highly suspect decision-making process) and still realized a good outcome. Alternatively, you could have reviewed reputable meteorological forecasts, driven the bus routes, consulted with your experienced transportation director, deemed the travel conditions safe, and experienced a weather-related bus accident—a poor outcome.

Sound decision making rests on the process one uses to make the decision, regardless of the result. Broadly, a good decision-making process for addressing a district problem or issue would involve the following sequential steps:

1. **Specify the problem or issue.** Specify the problem clearly, confirm that the problem exists, and disaggregate the "root" causes of the problem.
2. **Articulate a rationale.** Ensure that solving the problem advances district ends, not simply personal

wants. In other words, ensure that the perceived problem is, in fact, a problem from the district's perspective.

3. **Identify the stakeholders.** Identify those groups or individuals who are affected by the decision.
4. **Specify the objective(s).** Clearly specify the objectives you hope to accomplish by solving the problem, and rank them according to importance.
5. **Specify alternatives.** Specify the alternatives that, on their face, should address the objectives and meet your cost constraints.
6. **Predict effects.** Predict how each alternative will meet each objective.
7. **Predict costs.** Predict the costs (e.g., money and time) of carrying out each alternative.
8. **Balance effects and costs.** Consider the relative effects and costs of the various alternatives.
9. **Make a decision.** Select the alternative, if any, that will meet your objectives and that warrants incurring the associated costs.

Good decision processes increase the likelihood of *good outcomes*. That said, consider whether and when you use the steps prescribed above to make decisions. Upon reflection, it will come as little surprise to learn that people do not often use analytical processes when making decisions but rely on intuition instead.

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The Briefest History of Decision Analysis

Only recently have scholars undertaken earnest efforts to understand how individuals *actually make* decisions—a multidisciplinary field termed *decision analysis*. For much of recorded history, people believed that a decision's outcome depended on fate, fortune, gods, and goddesses.

It was not until the Enlightenment that mathematicians began to appreciate the complexity of making a sound decision. In 1565, Girolamo Cardona, an inveterate gambler, published the earliest known treatment of probability by documenting the odds of various dice combinations. Cardona was such a character that rumor has it he predicted the date of his own death and then starved himself to make it come true (David 1962).

About 100 years later, Blaise Pascal demonstrated that two elements are necessary to make a sound decision: (a) understanding the probability that a given outcome will occur and (b) placing a value on a given outcome. Most know his decision-making model as expected value calculations.

In 1738, Daniel Bernoulli recognized that two individuals might assign different values to the same monetary outcome, such as winning $10, and substituted the notion of utility (or satisfaction) to measure an outcome's value. For the next 200 years, scholars argued that the best way to make a decision was to compare the expected utilities of various outcomes and choose the alternative with the highest expected utility. Moreover, scholars argued, that is the way individuals actually made decisions.

Then in 1953, French economist Maurice Allais (1988 Nobel Prize winner) posed one of the earliest and most celebrated challenges to the conventional wisdom about decision making. Consider the two options below. Which would you choose?

- Option 1: 100% probability of winning $1 million
- Option 2: 10% probability of winning $5 million; 89% probability of winning $1 million; 1% probability of winning $0

If you are like most people, including a group of economists to whom Allais posed the challenge, you chose Option 1, winning $1 million for certain, although Option 2 has the higher expected value ($1.49 million). In short, Allais learned that those who argued that individuals should and do make decisions using notions of expected value or utility didn't do so when presented with a simple gamble where the probabilities and outcome values were stated clearly.

Social scientist Herbert Simon (1978 Nobel Prize winner), who is regarded as one of the founders of modern decision analysis, soon after Allais's challenge, stated, "There is a complete lack of evidence that, in actual human choice situations of any complexity, these computations [i.e., those demanded by contemporary views of decision making] can be, or are in fact, performed" (Simon 1955, p. 104).

Instead, Simon observed that decision makers are bound by their cognitive capacity (e.g., memory and ability to process complex information) and the task environment (e.g., imperfect information, the cost of obtaining information, and time). Simon was not saying that decision makers were "stupid," but that we cannot and do not make decisions the way economists claim we do.

Simon's simple observation prompted a generation of researchers to examine how individuals *actually* make decisions (called descriptive decision-making models) and to probe when and why these actions differ from how individuals *should* make decisions (called normative models). Many regard psychologists Daniel Kahneman (2002 Nobel Prize winner) and Amos Tversky as pioneers in this line of inquiry.

Dual Process Decision Making

Answer the following questions quickly:

- A pad of paper and pencil cost $1.10 in total. The pad of paper costs $1.00 more than the pencil. How much does the pencil cost? ____
- If it takes five teachers five minutes to grade five problems, how long would it take 100 teachers to grade 100 problems? ____

Now slow down as you reconsider the questions. If you are like most people, you responded initially that the pencil costs 10 cents, and the teachers would take 100 minutes. When you slowed down and reconsidered, you realized that the pencil costs 5 cents, and the teachers would take five minutes (Frederick 2005).

Researchers have discovered that people have two distinct mechanisms for making decisions that, in some instances, lead to different conclusions—as likely was the case when answering the two questions quickly and slowly. Theorists refer to the mechanisms as System 1 thinking and System 2 thinking; Table 1 presents the attributes associated with each (Evans and Frankish 2009; Evans and Stanovich 2013; Stanovich 1999).

Note that you cannot turn System 1 off. When presented with a problem, large or small, you will instantly, automatically, and effortlessly engage in System 1 processing and arrive at an answer, just as you did when presented with the questions above. System 1 processing did not reveal the alternatives you considered, or the reasons for rejecting or accepting an alternative. Only the final product of System 1, an answer, rose to your consciousness (Kahneman 2011). Most know System 1 processing as intuitive thinking, and its results as "intuitions" or "gut feelings."

Heuristics

Heuristics underlie System 1 thinking. Put simply, a heuristic is a rule or strategy that you can apply easily to make a decision quickly. Although you may not realize it, you likely use heuristics regularly to make decisions. To illustrate, answer the following question:

- How satisfied will you be with your career in five years?
  a. Highly satisfied
  b. Satisfied
  c. Neither satisfied nor dissatisfied
  d. Dissatisfied
  e. Highly dissatisfied

This question is difficult to answer. What does "satisfied" mean? What will the education policy environment hold in five years? Who will be your colleagues, supervisors, and board members? How will other life circumstances affect your job satisfaction (e.g., health and family)?

Table 1. Decision-Making Mechanisms

System 1 Thinking (intuitive)	System 2 Thinking (reflective, analytical)
Fast	Slow
Automatic, uncontrolled	Deliberative, controlled
Effortless, undemanding on cognitive capacity	Effortful, demanding on cognitive capacity
Associative	Rule based
Does not require conscious attention	Requires conscious attention
Inflexible	Flexible
Heuristic processing	Analytic processing

Perhaps you predicted your future career satisfaction after considering all of these factors, as well as others. More likely, your response rested largely on how satisfied you are with your career right now. If so, you answered the question using the *attribute substitution heuristic*. If a satisfactory answer to a difficult question does not come quickly to mind, you answer a simpler, related question (Kahneman 2011).

We often rely on heuristics for a simple reason. First, many of our decisions are of little consequence and do not warrant expending the time and effort to determine the "best" or "optimal" solution. In others words, for many decisions, the cost of using a complex, analytical decision-making model, like the one we presented earlier, exceeds the benefits we would realize from using it. Second, cognitive bounds (i.e., our inability to estimate the probability of various outcomes) and environmental bounds (i.e., time constraints and imperfect information) may prompt us to rely on heuristics to make decisions. Third, heuristics often result in satisfactory outcomes (Payne, Bettman, and Johnson 2004).

Biases (Systematic Errors)

Still, heuristic-based System 1 decision making does not always lead to desirable outcomes. Indeed, individuals err in predictable ways when making decisions. Decision analysts refer to these systematic errors as *biases*. To illustrate one of the many well-documented decision-making biases, answer the following question:

- *The National Center for Education Statistics* provides the most recent national indicators on school crime and safety. Since 1995, the percentage of students ages 12–18 who reported in-school victimizations (e.g., theft, rape, assault, robbery with weapon) has
  a. Increased
  b. Decreased
  c. Remained the same

For several years, we have asked our leadership graduate candidates that question. Their typical response is that student victimization has increased. When asked

why they believe victimization has increased, many recall the Newtown and Columbine tragedies, others their experiences breaking up fights or helping students report stolen cell phones. Their responses suggest that they assess the frequency of victimization according to the ease with which they recall such events, a decision-making practice called the *availability heuristic*.

Tversky and Kahneman (1974) discovered that when individuals are asked to estimate the frequency of a target event (e.g., school victimization), they search their memory for instances of the event. If they can recall instances easily, they deem the frequency high and the probability of a future occurrence likely. If they find that instances are difficult to recall, they deem the frequency low and the probability of future occurrence unlikely (Keren and Teigen 2004). The availability heuristic, like many heuristics, substitutes a difficult question for an easier one. When you are asked, "What is the frequency of the target event (e.g., student victimization)?" you answer by asking yourself, "How easily can I recall instances of that event?"

Although the availability heuristic is a useful decision-making tool—in general, more frequent events are easier to recall than less frequent events—it, like many heuristics, is subject to bias. The ease with which you can recall an event does not always correspond to the actual frequency of the event. For example, the frequency of student victimization has decreased steadily since 1995 (Robers et al. 2015). Those who remembered the Newtown and Columbine tragedies revealed how dramatic events can affect frequency estimates. Those who recollected their students being victimized also revealed how personal experience can affect frequency estimates.

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Turning back to the sequential decision-making process outlined earlier, it is easy to see how our susceptibility to the availability heuristic can undermine our decisions. Perhaps a salient event causes you to overestimate the frequency of, say, late bus arrivals. You respond by adding or changing bus routes. In the end, despite your earnest effort and resource allocations, your actions did not solve the problem—because it did not exist in the first place.

Upcoming Issues

System 1, intuitive thinking, is fast and effortless and does not require conscious attention. System 2, analytical thinking, is slow and effortful and requires conscious attention. Because engaging in System 2 thinking is comparatively hard work, individuals often rely on System 1 when making decisions. As Kahneman (2011) wryly notes, System 2 is "lazy."

In upcoming issues of *School Business Affairs*, we will highlight other well-documented decision-making errors and the advantages of System 2 thinking. As we did here, we will ask questions in an effort to prompt reflection and to demonstrate that our decision making is not always as sound as our intuition suggests. We will also note where a given error is likely to arise in the decision-making process and suggest ways to counter the error using what decision analysts refer to debiasing techniques.

If you are eager to learn more about decision making in the interim, you can't find a better work on the subject than Daniel Kahneman's *Thinking, Fast and Slow* (2011).

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