How to Make Rational Decisions in the Face of Uncertainty

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As we're battling a virus that scientists still don't fully understand, watching the stock market sink, then soar, then sink again, and facing a contentious election, the future seems completely unpredictable (instead of merely as unpredictable as it has

always been). When we feel such heightened uncertainty, our decision-making processes can break down. We may become paralyzed and afraid to act, or we may act on the basis of bias, emotion, and intuition instead of logic and facts.

Being aware of our uncertainty is a necessary precursor to managing it. Effective awareness means pausing, taking a strategic stop, and assessing the situation and the unknowns. We're now being confronted with data that *looks* actionable — even though logically, we know it's incomplete and volatile. But even when knowledge is limited, we have tools to help us make decisions systematically and analytically. Whether we're assessing the meaning of the latest unemployment numbers or the impact of local romaine lettuce shortages, we can use a simple four-step process to work with and through ambiguity to make careful, reasoned decisions.

1. Identify the category of historical data you are working with.

There are three main kinds of data we often confront and feel compelled to act on: **salient data,** which captures our attention because it is noteworthy or surprising; **contextual data,** which has a frame that may impact how we interpret it; and **patterned data,** which appears to have a regular, intelligible, and meaningful form.

2. Recognize which cognitive biases are triggered by each category.

Different kinds of data trigger different biases, so identifying the data type and its related bias makes it easier to escape mental mistakes.

- **Salient data** can activate *salience bias,* in which we overweight new or noteworthy information, resulting in suboptimal decision-making, planning errors, and more. For example, airline passenger demand in April 2020 plunged 94.3% compared with April 2019, because of Covid-19-related travel restrictions.

That shocking statistic might make us think that travel as we have come to know it is finished — but in reality, this one salient piece of data tells us almost nothing about future travel.

- **Contextual data** can constrict our thinking and lead to a *framing bias:* The context in which we receive the data impacts how we think about it. For example, "80% lean ground beef" sounds more healthful than "beef with 20% fat." But it's the same beef, framed differently.

- **Patterned data** often prompts the *clustering illusion* — also known in sports and gambling as the "hot hand fallacy" — whereby we assume that random events are information that will help us predict a future event. The human brain is wired to look for patterns, sometimes when they don't exist. Equally important, when patterns do exist, they often don't have predictive value. A die that turns up a two several times in a row has established a pattern, but that says nothing about what the next roll will be.

Recognizing how each of these categories triggers our biases can prevent us from falling prey to those biases, but how do we move forward once we've accepted that we need additional information or insight to confidently make decisions about the future?

3. Invert the problem to identify what you really need to know.
The third step in our process is to realize that you don't need to know everything, but you do need to identify what matters most to your decision-making. To do that, invert your problem solving. Begin at the end, asking: *So what? What do I really need to know to understand the situation? What difference would this information make? And how do I expect to use it?* The universe of "known unknowns" — those pieces of data that exist but are not in your possession — is endless. But you don't need to explore them all; inversion can help you home in on those you deem to be critical to solving your specific problem with confidence.

For example, the salient data about diminishing airline demand triggers a visceral response, which can make it easier to conclude that the industry is permanetly in dire straits. However, if we step back, we can recognize that there will continue to be an airline industry — that in the long term, people will want mobility, and the world's economy will require it. This is a "known known."

There is so much we know to be unknown. But there's good news: To solve a specific problem, you don't need to probe all the unknowns. To stay with our air travel example, this is true whether you are deciding whether to get on an airplane or to invest in an airline. A traveler's concerns would be whether and when there is a flight to the desired destination and whether it feels safe to take it, whereas an investor might focus on which airline is best positioned to survive the downturn. Either way, by inverting your problem you can focus on the known unknowns that matter to you.

4. Formulate the right questions to get the answers you need.

Many of us have trouble crafting the questions that could help us make a decision. One useful and practical way to move forward is to organize your questions into four main categories: behavior, opinion, feeling, and knowledge. This ensures that you'll bring both distance and a variety of perspectives to the way you probe your data, which will help you counter preconceived assumptions and judgments. It will also give you a better context for interpreting the answers, because you'll know the lens through which they are being filtered.

- **Behavior** questions address what someone does or has done and will yield descriptions of actual experiences, activities, and actions. If you're assessing the state of the airline industry, you might ask: Who is still traveling? Does that extrapolate to a larger cohort?
- **Opinion** questions tackle what someone thinks about a topic, action, or event.

They can get at people's goals, intentions, desires, and values. In the airline example, you might ask: Is it currently safe to travel? Are the airlines taking proper precautions?

- **Feeling** questions ask how someone responds emotionally to a topic. They can help you get beyond factual information to learn what people may be inclined to do regardless of the data. Here, you might ask: How safe do travelers feel? How safe do airline employees feel?

- **Knowledge** questions explore what factual information the respondent has about your topic. While some may argue that all knowledge is a set of beliefs, knowledge questions assess what the person being questioned considers to be factual. You might ask: What routes have been paused or cut? How many more will be cut? Have there been Covid-19 transmission cases linked to flying?

You can ask these types of questions about any kind of incomplete data: salient, contextual, and/or patterned. Step four acknowledges that uncertainty is a mix of actions and reactions, knowledge and emotion. Classifying and addressing the ingredients in the uncertainty mixture won't gain us certainty, but we can be sure that our questions address all areas of uncertainty.

The four-step process helps us better address our emotional responses, name and confront them, and move forward with a rational decision. We'll have a more complete picture, reducing the likelihood that we'll rely upon well-worn thinking pathways and cognitive biases.

Voltaire once famously recommended that we judge a man by his questions rather than his answers. We'll never know the future, but by examining our data and our thinking we can develop and ask great questions that will allow us to more confidently make decisions amid uncertainty.

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