EDITORIAL

Decisions, Decisions

In clinical care, business, and everyday life, we are called upon to make judgments with incomplete information. Judgments are a form of decision-making, and they are one of the most important aspects of leadership. Decisions will make or break a leader.

One of the challenges of confronting an issue is to clearly understand the nature of the problem before we start proposing solutions. Sohrab et al[1] refer to a "solution fixation trap" whereby the diagnostic discovery process is incomplete and fragmented when solutions are proposed too soon, causing a person or a team to keep stepping back and reevaluating what is really going on in a fog of confusion. In their framework, there are four phases or processes to improve the decision-making process. To be highly efficient, they argue, the team should spend most of the time diagnosing the issues (called "information processing"), followed by bursts of solution development ("solution exploration"), assessments of the impact of the proposed solution(s) ("confirmation"), and finally implementation of the solution(s) ("executive action"). The process isn't strictly linear, but the key observation is the need to spend most of the time in assessing the problem rather than jumping to solutions that may be incomplete when the problem isn't really understood.

To avoid the problem of "a solution looking for a problem," a careful approach to *sensemaking* is needed. *Sensemaking* is the judicious use of knowledge, observation, and measurement to determine the nature of the problem(s) or situation one is in. Consider a patient with advanced erosive wear, 12 mm of interocclusal distance, and a collapsed facial appearance with worn anterior teeth. Can the teeth be saved if a clear assessment is made and preventive measures demonstrate low caries risk? Are the causes of wear temporal, genetic, environmental, or habit-based? Are there contributing factors such as diurnal or nocturnal bruxism? No matter the circumstance, a premature solution may easily lead to a premature failure.

I like to frame this to students as follows: Given the clinical appearance, would your holistic diagnosis be different if you saw this degree of wear in a 19-year-old versus a 76-year-old? As I like to say, "Is the sky falling or is the noise just a few acorns?" The pathway to deciding the best course of action, especially when the potential solutions are very invasive, needs to consider the reality of human perception. After all, multiple studies have shown that humans are poor at observation. Our brains can be easily tricked, and multiple avenues of self-deception can occur in clinical practice and in research.

First is confirmation bias. This occurs when we only see part of the issue through pattern recognition (eg, "I've seen this before and therefore it can only be this"). Consider a patient with worn teeth. We only see the worn teeth and the facts that confirm our belief (and literally may not see clinical issues that do not match our preconceived cause). This has been the culprit in many human disasters, be it on airplanes, with space flights, or during implant care. We can fight this bias by asking ourselves to consider the contrarian cause—"If I am wrong, what else could be going on?"—and by "zooming out" of the immediate patient issue to think through the whole picture of what could be going on. I tend to do this the next day, after having processed during sleep the alternatives and thus come to new potential observations. For example, I recently had a patient with a loose implant crown. I restored this tooth 15 years ago, and all was fine until the abutment screw became loose 6 months ago. I retightened the crown, and here it was loose again. The radiograph appeared normal, so I retightened the screw again. But something wasn't right. The screw was tight (to the defined torque level), but the number of revolutions was too high. The solution didn't match the information processing, and thus upon confirmation (a new radiograph), I saw that the mesial half of the implant had fractured away.

While this is a particularly difficult situation, it outlines a decision-making process that can address the four challenges of decision-making: confirmation bias, short-term emotion, overconfidence, and narrow framing. Here I was with a patient I have known for almost 40 years, and I've seen so many implants that I saw only what I wanted to see. My emotions precluded me from seeing what I didn't want to, and I was overconfident in my assessment until I tried a pilot study (retightened the screw) and was cognitively sensitive enough to detect that something was different (sensemaking or information processing). In this way, I personally experienced the economic-psychologic experiments that Sohrab et al performed.[1] I just hope that I can still be considered in the category of a highly efficient and high-performing team! One never knows.

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REFERENCE

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