

EXPERTISE

By Sid Heal



The outcome of many a tactical operation or disaster response has hinged on the advice provided by experts. Their value is inestimable, and even courts allow them extra latitude in expressing their opinions. More research has been conducted in trying to understand what constitutes an expert than on any other facet of leadership. The value of expertise is such that the sale of a business may be contingent upon one or more experts agreeing to work for a given period of time, or the outcome of civil suit may be determined by the weight the jury gives to the opinions of an expert witness. Their value in successfully resolving a crisis is no less critical.

In essence, an *expert* is a person who possesses sufficient specialized knowledge, skills and abilities, so that

others may rely on his or her opinions. Expertise requires both analysis and intuition as no formulas or algorithms provide sufficient guidance to rely upon them. Understandably, experts acquire

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their attributes by a combination of study and experience. Because the time needed to develop expertise in complex fields can be lengthy, there is a noted relationship between expertise and age.¹ Another noteworthy characteristic is the fact that expertise is circumscribed because it is “domain specific.” For example, both pilots and doctors are experts but only in their particular fields. Likewise, it is relative; some pilots and doctors are better than others.

Research has revealed that experts are not necessarily smarter than others, nor do they think harder; they just think in more productive ways. In particular, experts are quick to identify and dismiss irrelevant or trivial factors. This allows them to concentrate on a smaller sample of those factors that are relevant

and/or unusual. Likewise, they do not repeat unproductive behaviors; they learn from their mistakes. This enables them to solve problems quickly because they do not start from scratch for each new challenge but rather where they left off on a previous, similar problem. This last factor is particularly important because as an expert's repertoire of experience increases, so too does his or her ability to recognize salient factors and apply promising solutions.

In examining what constitutes expertise, eight factors became apparent. The first is that experts recognize similarities in behaviors, actions, relationships and events in the current situation by comparing it with incidents from their experience. This *pattern recognition* provides the beginning of a framework to start identifying relevant factors and influences. Moreover, it is accompanied by expectations for probabilities which serve to focus and prioritize attention.

Second, based upon the initial mental framework, experts are quick to note discrepancies and anomalies. These are sometimes called *unmet expectations* and provide abilities to identify exceptions and novelty. Of particular value is the fact that experts are able to detect the absent as well as the present. For example, a novice is unable to discover something that should have happened but did not or something that should be present but is not because they lack the experience to provide a comparative example.

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Third, from these initial efforts at sensemaking², a mental model begins to emerge. This mental model enables experts to gain a general awareness of what is happening — to see the “big picture.” This step marks the infancy of growing *situational awareness*³, and when asked to describe what is going on, experts nearly always provide an overview of the main features rather than detailed descriptions of the factors that led to it. It is also here that plausible goals begin to become apparent and viable courses of action are discerned.

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Fourth, this mental model continues to mature and experts use it to *envision how particular tasks, equipment and teams will function and collaborate*. This enables them to anticipate problems and conceive adaptations to better fit the current circumstances. Moreover, besides their individual field, they have a basic knowledge of diverse subjects and so are able to better project how special units and people with specialized skills can be put to best use.

Fifth, as the mental model continues to become richer with knowledge and understanding, experts *seek and identify opportunities and leverage points⁵ and take measures to exploit them*. When contradicting information and observations challenge their current thinking, experts are quicker to change their mental model or adopt a new one entirely than are novices. Interestingly,

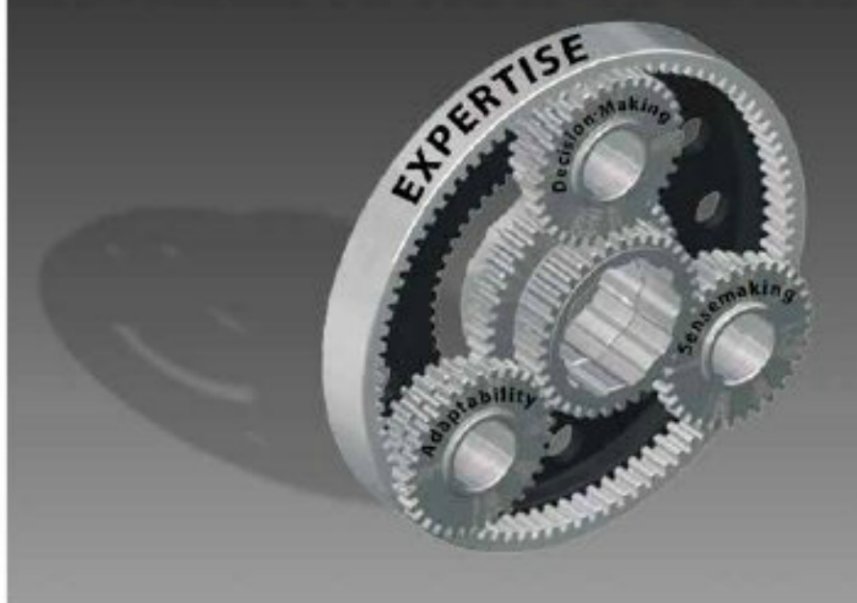
they are also able to challenge their mental model by contemplating permutations not necessarily supported by observations. This aspect provides experts a nimbleness of mind over novices, who tend to maintain their original impressions.

Sixth, using their mental model, experts *run mental simulations* which include both the past experiences and future potentials. Even when evidence is lacking, experts are able to envision how something must have come about and extrapolate what is likely to happen. They are also able to envisage the situation from another's perspective, especially an adversary. This aspect increases their ability to adapt plans and actions to fit the unfolding circumstances.

Seventh, experts are able to *detect subtle differences that may not even be describable*. Things like the color of smoke and how it lofts may have unequivocal significance to an expert firefighter but are impossible to explain to novices. In the same manner, an expert in law enforcement may express a feeling, sometimes called a “gut instinct” or “street sense,” without being able to precisely articulate exactly what it is. Notwithstanding, there is ample evidence that this ability is shared by experts in their fields and provides them advantages, sometimes decisively, which are not enjoyed by the less capable.

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One way of visualizing the critical interactions of the three processes involved in expertise is as a planetary gear. As depicted here, each of the processes contributes to the overall function, and impairment of any one can be catastrophic.



Eighth, experts are not only aware of, but *manage their own limitations*. They understand their own thought processes and are mindful of where they are weak or based upon a presumption. When events are unfolding faster than they are capable of understanding, they are quick to take corrective measures before becoming hopelessly confused. This is especially useful in that experts tend to know what they do not know and make efforts to find out.

If all the individual attributes necessary for expertise were grouped into categories, three would predominate. These are sensemaking,⁵ decision-making and adapting.⁶ (Figure 1) Each of the three is not only essential in its own right but facilitates the other two. Regardless of an expert's particular field, each of them has a deeply developed perception of how these domains

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work together to develop the piercing insight that characterizes their expertise.

With the addition of the roles of counterterrorism and homeland security, the complexities of local law enforcement have increased dramatically. First responders are now being asked to handle chemical, biological and radiological threats, active shooters, mass attacks and bombings. No formulas, algorithms, standard

procedures or checklists can provide the insight and understanding necessary to sort order from chaos, recognize patterns and craft plans on the fly. Accordingly, the ability to develop, cultivate and incorporate expertise into a response becomes indispensable. ■

ENDNOTES

1. This can be as much as 10 years. Gary Klein, *Sources of Power: How People Make Decisions*, The MIT Press, Cambridge, MA, 1999, p. 147. Note: While the information for this article is derived from a number of sources, this book provides one of the best sources for a comprehensive and easy to understand overview.
2. For more information on Sensemaking, see "Sensemaking," *The Tactical Edge*, Spring 2014, pp. 56-58.
3. For more information on situational awareness, see "Situational Awareness and a Common Operational Picture," *The Tactical Edge*, Spring 2002, pp. 55-56.
4. For more information on leverage points, see "Junctures and Leverage Points," *The Tactical Edge*, Summer 2012, pp. 72-73.
5. For more information on decision making, see "Crisis Decision Making," *The Tactical Edge*, Winter 2014, pp.76-78.
6. For more information on adapting, see "Adaptive Decision Making," *The Tactical Edge*, Spring 2013, pp. 82-84 and "Adaptive Leadership," *The Tactical Edge*, Fall 2013, pp. 30-36.