

Reactions vs. Decisions

By Sid Heal

One of the amazing things about the human brain is that it is “multi-tasking,” that is, capable of simultaneously doing more than one thing. Take driving, for example. It has been estimated that when you drive you are consciously and unconsciously making as many as 300 decisions a minute. These involve steering, braking, accelerating, estimating distance, anticipating actions of other drivers, and so forth. At the same time, you may listen to the radio, carry on a conversation with a passenger and drink a cup of coffee. In order to handle these many decisions, the brain must prioritize which decisions are more important and when they must be made. For instance, you are talking with your passenger and you suddenly notice the car immediately in front of you is braking hard, and you are in danger of hitting it. This creates unbelievable stress, and your brain immediately focuses on identifying an appropriate response, such as taking an evasive maneuver or braking hard. When this occurs, you do not even have the ability to finish your sentence, much less carry on the conversation. This is because the brain processes safety decisions faster than cognitive ones. You react before thinking.

Like driving, many situations arising in a tactical operation also require near-instantaneous responses. A delay of even a split-second can be calamitous. During depositions and testimony, however, officers are expected to relate in great detail those factors that caused them to act. Because they usually can, it appears to the more naïve that these factors were all known and considered before the action. Herein lies the root of one of the most common misconceptions in tactical decision-making. Decisions and reactions are distinctly and fundamentally different but are easily confused with one another because stressful events are so easily imprinted in memory.

Decisions are conscientious choices between alternatives. They involve the portion of the brain¹ where intellect and mem-

ory provide the basis for a cognitive judgment. At the risk of oversimplification, decisions involve three separate but interrelated factors. The first is reason or judgment. This aspect may be most simply thought of as an examination of the “cold,

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hard facts.” It is an objective and rational comparison and selection between alternatives. If reasoning were the only factor involved, tactical decisions could be reduced to mathematical computations and computer models. But how information is evaluated and judged to be relevant, as well as the degree of importance it is accorded, is just as crucial.

The second factor is the inclusion of emotions. Emotions will influence decisions from personal dispositions, biases and prejudices. They are subjective influences that occur without conscious effort and may even evoke strong physiological effects. Our emotions are affected by such influences as anxiety, fatigue, hunger and pain. That they can also evoke physical feelings should not come as a surprise either. Our language is rich with descriptions of “gut-wrenching” anguish and “heartbreaking” sorrow. To a greater or lesser extent, emotions are always present and significantly influence how we receive and process information.

The third factor, perceptions, determines how we view information. How we interpret information and determine its importance is a complex and interrelated process of culture, values and experience,

embedded in context. These create a frame of reference we use to sort through a jumble of seemingly incomprehensible factors and reach a decision. Before information can be incorporated into the human decision-making process it must first be accepted. The truth is not enough; we must also believe it.

To a greater or lesser degree, these three factors are always present and strongly affect how we make decisions. They also unequivocally demonstrate that decision-making is an intellectual process that occurs almost completely in the brain itself.

In contrast, reactions are responses to some treatment, situation or stimulus. One of those most often encountered during tactical operations is fear.² Unlike decisions, reactions are processed in a more primitive portion of the brain that is incapable of conscious thought.³ When a threat is perceived, this portion of the brain sounds a kind of general alarm. The adrenal system quickly floods the body with adrenaline and nonessential physiological processes, such as digestion, are switched off. Our heart races, breathing quickens and blood pressure increases, saturating the body with oxygen. At the same time, the liver releases glucose for quick energy. The entire body is instantly at a high state of arousal. These are primarily physiological reactions and require no intellectual activity.

As can be seen, reactions are distinctly and fundamentally different than decisions. What is not well known, however, is that while both reactions and decisions originate in the brain, the sensory data from which they are derived have taken two different paths to two different locations and arrived at two different times. It happens like this.

When we encounter a threat, the sensory data from our eyes, ears and other senses are simultaneously transmitted to different parts of the brain. One data stream is directed to a place where it will be integrated with other real-time sensory



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data, memories and other more elaborate associations. This often takes several seconds to complete. The other, with far less detail and almost no processing, is sent to an area where an alarm is sounded to mobilize the body to meet the threat. This takes only a fraction of a second. Thus, the same sensory data follows parallel pathways to the brain but at different speeds. This is why a person who is startled by a figure in a dark hallway may freeze, flinch, scream or even attack before recognizing the face of a loved one who frightened them. And, because fear evokes memories that are easily triggered and hard to shake, people who encounter these situations can often recall them in great detail long afterwards, even though the events may have unfolded in only a few seconds. Consequently, the impression that thought was involved is easy to believe. Even the person experiencing the threat may be confused. Because people who can “think on their feet” are prized, their ability to recall details and explain their reasoning is reinforced with praise. Thus, our own human nature adds to the confusion.

Of particular note is that because a person's reactions can be “conditioned” to more appropriately respond to situations, the value of training and experience cannot be understated. Seasoned officers will react differently than neophytes. The implications need no further comment. ◀

Footnotes

1. While not everything is known about how decisions are reached or precisely how they are formed in the brain, the portion most often involved is the hippocampus.
2. For a more thorough description of the effects of fear, the author strongly recommends Steven Johnson's article, “The Brain and Emotions – Part 1, Fear,” *Discover*, Vol. 24, No. 3, March 2003.
3. This portion of the brain is the central nucleus of the amygdala and links the key brain stem areas with the autonomic (involuntary) functions of the body.



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