The Downshifting Dilemma: A Commentary and Proposal

by Robert Sylwester

Metaphors are useful, since they connect complex concepts to understandable objects and events. All metaphors (and also maps, models, and explanations) contain a certain level of distortion. For example, the star constellations don't represent actual stellar relationships, but rather provide a simple location/direction model for non-astronomers. Metaphoric distortion is acceptable as long as the metaphor adequately communicates the essence of the concept, and users understand the nature of the distortion. Recent cognitive neuroscience developments are altering our understanding of a variety of brain systems and processes, and so it should come as no surprise that some of these new understandings suggest that we'll probably have to redesign or even abandon some of our long-established much-loved metaphors.

I believe that downshifting is an example of a widely-used metaphor that has outlived its usefulness, because it doesn't adequately communicate current understandings of how our response systems function. What follows, therefore, is a critique of the metaphor, and a suggested alternative.

The Downshifting Metaphor

Downshifting is a mixed metaphor that emerged out of Paul MacLean's Triune Brain model and a car's gear mechanism. It implies a three shift automobile drive system. When I ask educators who use the metaphor to explain their understanding of it, they tend to respond somewhat as follows: Low gear (the reptilian complex) drives primitive/reflexive responses. Middle gear (the limbic system) drives emotional responses. High gear (the cortex) drives rational/reflective responses. Thus, someone who is currently functioning rationally may be confronted by a difficult problem, and downshift to an emotional or primitive response level (much as we downshift a car when we're confronted by hills/mud/etc.). When questioned further, most view downshifting as a negative action.

The key problem with this scenario is that our emotions are not a centralized response system (as second gear implies), but are rather part of an extended alerting or arousal system that establishes the emotional tone and bias of our response to clear and ambiguous dangers and opportunities. Emotion is quite transitory, mood might last for days, and temperament provides a lifelong emotional bias.

Our several specific emotional subsystems alert us to dangers and opportunities that shift our attention from its current focus to that of the emerging problem -- and these actions then activate our various response systems (or as I've previously written: emotion drives attention, which drives learning, memory, problem solving and just about everything else). Since our emotions thus don't respond, but rather simply establish and help to maintain the focus and intensity of our attentional and solution systems, it's neurologically incorrect to suggest that we downshift from a rational to an emotional response (second gear).
A second problem with the downshifting metaphor is that only one car gear can function at a time, and our brain is a marvelous parallel processor. So to use the current car metaphor, I could be driving with friends and simultaneously carry out all of the following: (1) automatically operate the car's navigation mechanisms (low gear), (2) monitor a beautiful orchestral piece on the car radio, and note dangers and opportunities in traffic patterns (middle gear), and (3) carry on a thoughtful conversation with my friends (high gear). That's some gear box! Downshifting implies to me that our brain functions in only one response mode at a time, and it doesn't.

I indicated above that many folks view downshifting in negative terms, and that creates a third problem. Each of our several response systems evolved to carry out an important function, so primitive responses aren't necessarily negative. We don't have to use good manners when our life is on the line. Most of our responses to challenges involve simultaneous behaviors at several levels, and so we ad hoc our way through life with regrets and apologies for acting too quickly or, for delaying too long. Would that the cognitive line between rational and irrational responses were so neatly drawn.

Consider the film, "Saving Private Ryan." It's apparent that the concept of downshifting isn't up to the task of explaining the complex emotional/attentional and primal-to-intellectual dynamic of the high-level military/political decision to risk the lives of several soldiers in an attempt to save the life of one. Was the decision good/bad, moral/immoral, heroic/cowardly, rational/irrational?

Further, who were the good guys and who were the and bad guys in the film (considering that the German military tended to send Polish and Estonian youth to defend the dangerous positions that are the focus of the film)? We see what is called downshifting throughout the film, and yet it seems an inadequate metaphor for the complexity of the behaviors depicted.

Finally, the limbic system (which is central to the Triune Brain Theory that sparked the downshifting metaphor) has recently come under increasing critical assault (LeDoux, 1996. Brothers, 1997. Pert, 1997. Pinker, 1997). We now know that our emotional system is neurologically widespread, although many of its important functions involve structures (such as the amygdala) historically associated with the limbic system. I've gotten a lot of mileage out of my index finger/bagel/construction paper model of the Triune Brain, and I now think that I finally better eat the bagel. 3

I'm not arguing that we can never consciously move from a rational to a primitive response mode (as implied by downshifting). Continued frustration with a persistent problem could certainly lead to a deliberately directed primitive outburst, but primitive responses aren't generally deliberate. They're stress-driven, and are typically precipitated by serious new information. This means that the previous situation itself has now changed to a new situation -- and this then-now separation finally suggests how we might begin to think of a new explanation for what we formerly called downshifting.

A Proposal

Cognitive problems can arise out of external sensory information or internal mental processes.
Most incoming sensory information is initially processed through the thalamus into two separate response systems:

1. We have a relatively slow, analytic, reflective (primarily cortical) system to explore the more objective factual elements of a situation, compare them with related memories, and then rationally respond. It's best suited to non-threatening situations that don't require an instant response, life's little challenges.

2. We have a fast, conceptual, reflexive (primarily subcortical) system that identifies the dangerous and opportunistic elements in a situation, and then quickly activates powerful innate or learned automatic response programs if survival seems problematic. This fast stress-driven system developed to respond to imminent predatory danger and to fleeting feeding and mating opportunities. Our emotional/attentional systems thus are primed to quickly focus on (for example) any loud, looming, contrasting, moving, obnoxious, or attractive elements that signal potential danger, food, or mates, and to rapidly signal the information to our solution systems.

The fast system thus enhances survival, and so it's the default or go-to system, and not the one we downshift to. If anything, our response would typically begin with this immediate reflexive response system and then upshift to a more reflective response if it's apparent that the situation doesn't require an immediate response (just as in a car, which almost always begins in low gear, and then shifts up).

Unfortunately, the rapid superficial analysis of the fast system often leads us to respond fearfully, impulsively, and inappropriately to situations that don't require an immediate response. Stereotyping, prejudice, regrets, and apologies are but four of the prices we humans continually pay for this powerful survival system. Worse, the neurotransmitter and hormonal discharges associated with fear can strengthen the emotional and weaken the factual memories of an event if the stressful situation is serious and/or chronic. We become fearful of something, but we're not sure why, so we've learned little from the experience that's consciously useful (because a reflexive response functions unconsciously).

Further, chronic activation of our fear pathways can result in physical deterioration within our memory systems. I suppose that it is these elements that have led to the negative reputation that primitive responses seem to have in the downshifting metaphor. But a primitive stress-driven reflexive response is truly advisable in a situation that requires an immediate forceful response such as sudden acceleration or rapid braking in response to traffic conditions. Our stress system evolved to be used as a temporary rather than continuous response system. It's like salt, a little bit is biologically useful; a whole lot is generally harmful.

I don't believe that we must have a metaphor to describe our dual response system. Why not just use the terms reflexive and reflective?

The explanation might go something like this: When our emotional/attentional systems report a serious problem, our first line of either defense or attack tends to be reflexive. Powerful reflexive response repertoires are unconsciously activated. Our slower reflective problem-solving system is simultaneously alerted, and it can soften or even override our reflexive system's response if it
can quickly come up with a better solution, or negotiate a delayed response (such as to count-to-
ten when anger flares). Conversely, we tend to activate our slower reflective system to solve
challenging problems that don't carry the sense of immediacy that activates the reflexive
responses that impede reflective thought.

We thus have two excellent solution systems that can independently and cooperatively respond
to most of the challenges we face. I'm currently typing reflexively (unconsciously, automatically)
but I certainly hope that what I type comes out of reflective (conscious, deliberate) thought
processes. Both processes are essential to the production of this commentary. They are neither
positive or negative. They exist to carry out different (but often simultaneous) functions. When I
was learning to type, I was very reflective and deliberate about striking the keys. I consciously
knew where all the letters were on the keyboard, but I was slow and inefficient, because I
couldn't simultaneously (1) reflect on what I would write, and (2) type it. Today I don't
consciously know where any of the letters are, and I'm a fast efficient writer and typist, because I
can use my conscious reflective system to focus entirely on thinking about what I'll write, and
my unconscious reflexive system to simultaneously carry out the appropriate typing actions.

The two systems also function equally efficiently in response to social challenges. For example,
a teacher could be reflectively working with a class and suddenly be confronted by the
inappropriate behavior of a student. She could immediately reflexively respond to that student
while continuing to function reflectively with the rest of the class. There's no shifting, just a
simultaneous response to two different stimuli, something our parallel-processing brain does
with ease.

It's possible that a person biased towards reflexive responses may reflexively respond to many
situations that are better solved through reflection, and a principally reflective person may
likewise reflectively delay responses to imminent dangers and opportunities. It's not a foolproof
system.

Children must learn how to intelligently solve problems beset with obstacles, and so they must
come to understand, respect, and effectively use both of the systems. The school environment
and curriculum should enhance this learning process by reducing the specter of threat when it
doesn't enhance the reflective learning process, which should be conscious and deliberate.

Fear is an important element of some reflexive learning, however, and so we appropriately insert
it into practicing automatic safety responses, such as fire drills. However, fear doesn't enhance
and isn't necessary in the mastery of most school-related automatic skills (such as reading,
computation, typing). Place students in a positive challenging classroom, and even the youngest
can understand the value of practice activities that lead to the automatic mastery of important
things. They did practice endlessly and joyfully when they learned to walk and talk.

I would therefore suggest that we simply use the terms reflexive and reflective to describe our
response patterns. Further, we shouldn't think in terms of shifting back and forth between the two
(as with a gearshift), but rather realize that we tend to use the reflexive or reflective system that's
initially best suited to the current situation, and that we probably also use both systems in a
variety of currently ill-understood combinations to respond to many of the problems that we face.

Reflexive and reflective are easily understood terms that are commonly used by cognitive neuroscientists, and they don't contain the problems that downshifting has. They work for me, and so perhaps also for you. The option is for someone to come up with a new, good, scientifically appropriate metaphor.

References


About the Author

Robert Sylwester is Emeritus Professor of Education, University of Oregon. You can reach Dr. Sylwester at:

University of Oregon
College of Education
Eugene, OR 97403-5267
Phone 541-345-1452
FAX 541-346-5174
Email bobsyl@oregon.uoregon.edu.

October 1998