

LYLE'S LAWS

# Lyle's Law of Thinking

**W**HITewater RAFTING was never high on my life's list of things to do, but when my wife and I were invited to join our daughter and her family for a day on the New River of West Virginia, we were off to the rapids. This was not one of those adventure tours that puts a crew of 20 in an inflatable raft the size of a semitrailer to plunge through waves that would get the serious attention of a destroyer escort. We rode in simple two-person inflatable kayaks, and the most significant rapids were rated class III.

Not that it was just a piece of cake. On one stretch of fast water, my granddaughter and I had an intimate and vigorous encounter with a submerged rock and found ourselves facing cross-river as we arrived at the big standing wave in the middle of the rapids. Bad position. The kayak flipped, and we got a dunking. There were no injuries (except to my pride), and we drifted into the next area of calm water and climbed into the boat.

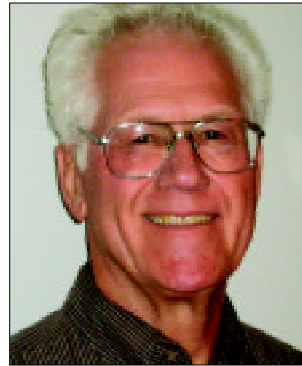
Arriving in that section of flat water made me appreciate the fact that the New River changes its character from time to time as it follows the laws of physics that draw it ever downward. In some places, its waters converge and move rapidly forward. In others, they diverge and slow down and lap gently at the shores, which are broad and relatively placid. This convergent-divergent pattern, repeated throughout the river's course, led me to the discovery of *Lyle's Law of Thinking*: **Think like a river.**

What can a river teach us about thinking? First, consider the rapids. In general, when we are in a problem-solving mode our thinking is like the flow of water through the fast stretches—convergent and highly linear. The solution (i.e., THE solution) is somewhere ahead of us, and our job is to get there in the fastest way possible, with each step dictating, or at least suggesting, what the next step should be. We are in the rapids, moving with as much speed as we can muster, buffeted about a bit, but drawn ever forward by the principles of problem solving and the desire to reach the solution as soon as possible.

But wait. The river doesn't stay in the rapids forever. After a period of fast, convergent, sometimes turbulent progress, it slows, diverges, and eases along between the wider shores, considering, perhaps, how to proceed when it enters the next constriction. Indeed, rivers do sometimes find new paths out of these placid pools and stop following the channels previously pursued (witness the ox-bow lakes in many river valleys). We need to do the

same in our thinking. We need to pause occasionally in our pursuit of a solution to let our thinking spread out, to see if we have missed anything, to consider if it is really time to lock ourselves into this particular path, or if there might instead be a better, more creative way to accomplish our ends.

However, we don't have the luxury of staying in this



*What can a river teach us about thinking?*

relaxed, reflective mode for very long. An engineer's job is to solve problems, and that doesn't mean just reflecting on them or considering various alternatives. After an appropriate amount of divergent thinking, we have to enter the rapids again and speed things up and move once again as rapidly as possible toward a solution. The trick of thinking like a river is to have the discipline—to hesitate from time to time and say, "Now that I know where I am going, am I sure that's where I want to go?"—to slow down and allow the right

side of our brain to take over for a while and be divergent and creative—to look for alternative solutions—to consider some of the consequences (environmental? social?) of the path we are pursuing. And then back to the rapids.

Of course, this metaphor eventually breaks down, as all metaphors must. Generally, as rivers approach their appointment with the sea, they slow and spread into a delta with no clear conclusion. Obviously, that is not a good model of thinking for engineers or anyone else. We dare not think like the Mississippi in its lower reaches. There are some good engineering rivers, however. Take the Niagara, for instance. It has its rapids and its cascades; it even has a major (how's that for understatement?) waterfall and at least one whirlpool. It also has some wide spots where it moves with relative calm. Finally, it enters Lake Ontario in a clearly defined channel, having resolved all the uncertainty of its passage—a great model of a good thought process.

This is probably as good a time as any to introduce the reader to *Lyle's Law of Laws*: **The better the law, the more general its applicability.** I use this law to judge the quality of proposed laws and decide which one to write about. By this criterion, the Law of Thinking is outstanding. It certainly does not apply just to engineers. Indeed, while these paragraphs have been directed to those of us of the convergent persuasion to remind us to broaden our thinking from time to time, the law can as easily be used as an admonition to the right-brained among us that, eventually, convergence is necessary so that action can be taken.

And the law can be useful in many facets of our lives. We make various decisions as we speed through our days and weeks and months, and the quality of those decisions could undoubtedly be improved by thinking like a river. Take the time to ask whether your current decision is indeed the best, whether there are better alternatives and, indeed, WHY you have chosen that particular option.

Some say that a river is a living thing—even that it has a soul. I'm not sure I would go that far, but I do believe a river is a great model of how to think. If that means it is alive, so be it.

—Lyle D. Feisel, Ph.D., P.E., *Iowa Alpha '61*

---

CHANGE OF ADDRESS ✍ THE BENT

Name \_\_\_\_\_ Chapter \_\_\_\_\_ Class \_\_\_\_\_

New Address \_\_\_\_\_ Effective date of new address: \_\_\_\_\_

New City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

*Email to:* addresschange@tbp.org

*Or complete this form and mail to:*

Tau Beta Pi / P.O. Box 2697 / Knoxville, TN 37901-2697

*Affix mailing label here if available.*