

Linear and Non-linear Thinking (Newsletter)*

December 11, 2009

Almost all of us experience the world by sight, sound, or feeling. While we use all three senses, one is primary for each of us. Consider discussions when one person makes a point or suggestion and others respond, "I see what you mean," "I hear what you're saying," or "that feels good to me." How we perceive the world contributes to how we make decisions.

Some of us make quick decisions based on instinct or feelings. Others need to see or hear great detail, analyze extensively before deciding, and may still lack confidence in the decision.

Not surprisingly, we tend to feel the most comfortable with people who perceive the world through the same primary sense we do, and who make decisions as we do. The analytic cannot understand how the emotional can make such a quick decision without every fact and analytical process; the emotional is frustrated that the analytic appears to avoid committing.

We also tend to be linear or non-linear thinkers, and we select careers and work environments that favor the way we approach solving problems. Each category of thinking is critical in the appropriate context, yet each is not the only "right" approach to all situations. We need to be aware of these differences to achieve the results we need.

Linear thinking leads to applying the same approach to each new situation. We want this consistency when designing and building a bridge or building. We don't want it to collapse because proven rules of material strength or support design were ignored. There are cookbook recipes to be followed, with minor adjustments based on characteristics of each location. Because adherence to established practice is so important professions preferring linear thinking (such as engineer and geologist) often require certification and registration by state governments. We need linear thinkers when the situation is predictable and the range of options limited. However, not all situations fall in this category.

When the situation involves the economic, natural, or societal environments we need the non-linear thinker. This is especially important in environmental permitting and similar situations. Impact assessments, water quality

*Copyright ©2009 Applied Ecosystem Services, Inc.

influences on aquatic biota, endangered or threatened species, stream/river channel morphometry, sediment dynamics, water flow dynamics, and other concerns vary by location, time, and the project being considered. Permitting, resource allocation policy decisions, and legal cases are only three of many common situations that are strongly influenced by societal or special interest values and beliefs. There is no cookbook recipe on how to approach these situations, and doing exactly the same as was done before is not guaranteed to meet our needs. Actually, if we are not satisfied with past results we must do something different if we want different results.

By its nature, non-linear thinking produces new ideas, approaches, or techniques. Because newness means change, we might resist because we fear change. The perception that change increases risk is common, and to differing degrees we all fear change. When we are faced with a completely new situation, or a repeating situation which did not produce satisfactory results in the past, we need to appreciate that change is necessary, does not automatically involve increased risk, and that the non-linear thinker's approach could benefit us much more than would following the well-worn path we took before. Risk is relative, and there also is risk in not changing when a different outcome is needed or wanted. Select the linear or non-linear thinker based on the fundamental characteristics of your situation and the factors that affect the optimal approach.