The Science of Creativity: Five Takeaways

To foster innovation, it helps to understand the science underlying creative thinking. Below are five principles foundational to the creative thought process, from which we can draw practical implications for enabling innovation in our personal and work lives.

1. **Defer judgment.**
   Creativity mandates control over one’s VOJ.

The Voice of Judgment (VOJ) is the filter in our brain which enables us to screen out ideas that are suboptimal or unrelated based on our past experience. It is the voice that says, “That’s not relevant” or “Don’t even go there.”

Without our VOJ, we’d be incredibly inefficient. Picture rain falling on a landscape. It is initially absorbed across the surface, then streams and rivers form, which moves water along more efficiently. Our brain also forms these rivers for processing information. Our VOJ is inherent to intelligence, just as pattern recognition is a fundamental science for artificial intelligence.

The challenge is, those rivers can become more akin to “ruts”. While our VOJ keeps us efficient, it can also filter out new ideas which may better fit new circumstances, or implausible ideas that could help to inspire better options.

Further, when our mind gets into an evaluative mode, the parts of the brain that create are less active. So silence that VOJ and defer judgment – the “creative mindset” is a physical place, and divergent thinking requires us to spend some time there.

2. **Our thought processes are non-linear.**
   Be patient – “ruts” are efficient paths to results, breaking out...no so much!

Our brains don’t think in an evenly paced, sequential fashion. As an analogy, imagine a grain of sand dropping onto a pile of sand. It will slowly accumulate, then suddenly a small avalanche will occur. Our brains process information similarly – accumulating knowledge, then bursting forth an idea in a seemingly random epiphany, even when the mind is not thinking about the problem at hand. The overall process can be highly productive, but we can’t always see the productivity in each step along the way.

For example, our capacity to create new ideas is enriched by our ability to connect information that previously seemed unrelated to the problem at hand, thus breaking us out of our neural “ruts.” Because our thinking patterns are deeply rooted, we can benefit not only from new perspectives but from engaging ourselves in patterns so outside our familiar domain that we can return to our problem with a fresh outlook. Even if there is no immediate tangible result, we foster innovative thinking through exposure to information outside our zone of familiarity.
3. **Have faith in each person’s creativity.**  
*Creativity is not uniquely inborn, it is unleashed.*

Consider the results of research which identified the two biggest differences between creative and non-creative people:

1. Creative people believe they can be creative
2. Creative people are less sensitive to criticism

Different personality types are all capable of creativity, from analytical to artsy, but different approaches may be needed to remove impediments. E.g., a person who thinks concretely may value having a board of palpable results, and a results-focused mindset may be more open to brainstorming when success is defined as generating 29 bad ideas and one good one. Some people think better on their own while others think out loud through interactive dialogue, or a structured thinker may prefer tools that provide a framework for creative thought (e.g., a 2 x 2 matrix) and extend from what is already familiar. The point – the ability lies within each person; be thoughtful in how to motivate, remove inhibitions, and create a fitting venue for innovative thinking.

4. **Diversity and adversity enable us to adapt.**  
*Corollary: Don’t banish the mutants.*

Around 225 million years ago, 95% of the species on the planet became extinct because they couldn’t adapt to their environment. In business, we tend to match competitive moves as we benchmark our current scope of rivals. Yet being like others is no guarantee of survival. In fact, **most significant innovations in an industry come from newcomers or players outside the industry.** The takeaway - incumbents are well served to welcome new and different perspectives, and to accept that people who do not “fit in” may be key contributors to the innovative process.

Further, recall from Darwin that it is the **mutations** that enable a species to adapt. Think of that next time the crazy newbie in your office makes an annoying suggestion!

5. **Precise observations & Penetrating questions.**  
*Better understanding precedes better ideas.*

Before IDEO, Michael Ray (a Stanford professor who led the business school’s work in creativity for decades) and others as well have emphasized that the foundation to creativity is the ability to make precise observations and ask penetrating, insightful questions. **Innovative people notice things.** A great takeaway from the Design Thinking process is the importance of learning and observing prior to the process of ideating solutions. As managers, we can create venues for our people to learn and observe… to create time and space for deeper understanding in a manner that is de-linked from advocating solutions.

**Overall, note that…**

**Methods for fostering creativity are often at odds with near-term efficiency.** Recognizing this trade-off is a first step toward striking the right balance.