On the Epistemology of Innovation

How Breakthrough Innovators Connect the Dots

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The intersection of curiosity and connectivity

The Magic Eyes® of innovation: A metaphor for discovery

Magic Eyes® images can provide significant insight into how breakthrough innovators collect and connect dots

In addition to what we learned from observing SIs, by exploring the etymology of the words understand (including the meaning “to stand in the midst of”) and comprehend (including the meaning “to take together, to unite”) we find metaphors for knowing that are entirely consistent with the SIs’ experiences – their intimately experiencing something as a united whole, not a detached viewing of individual elements. But more on this in a later essay.

In this essay and the next we will explore a simple, yet powerful metaphor for these concepts and use it to tie together several, apparently disparate insights about how SIs innovate.

Viewing Magic Eye® images as a metaphor for the “know how” of innovation

My friend, epistemologist Esther Meek, offers an intriguing illustration of knowing that captures much of what our SIs expressed as they spoke of their emerging awareness of breakthrough insights, the act of viewing Magic Eye® images (hereafter referred to as Random Dot Stereograms (RDS)). We see in Figures 1 and 2 on the next page just how the act of viewing an RDS image parallels – is a metaphor for – the “know how” of innovation.

My friend, epistemologist Esther Meek, offers a powerful illustration of knowing that captures much of what Serial Innovators (SIs) expressed as they spoke of coming to visualize breakthrough innovation, the act of viewing Magic Eye® images.

The apparently random dots of the RDS (in Figure 2) illustrate the apparently random mass of data confronting the SI (in Figure 1). Just as the RDS viewer in Figure 2 does not focus on the two-dimensional surface image, the SI in Figure 1 does not focus on the data itself. Instead, RDS viewers and SIs look at the totality of available data in parallel. Only then can either the RDS viewer or the SI have the capacity to see what they are looking for – the embedded three-dimensional pattern for the RDS viewer (Figure 2) or the breakthrough innovative concept for the SI (Figure 1).

Relevance to innovation

The metaphor of viewing such images as representing the “know how” of innovation is particularly powerful, with several key features of innovation capable of being illustrated through it. Since the relative focus of this essay

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prohibits an exhaustive consideration of the metaphor, I will revisit it in significant detail in the next essay, touching only on its key points here.

First, this metaphor illustrates that the act of innovation requires both “know what” and “know how”. One cannot “connect the dots” without first securing a sufficient number of dots and sufficient range of types of dots with which to work. The importance of curiosity is of particular note in this respect. SIs exhibit a high degree of curiosity on which they rely to populate the set of dots that they carry with them. However, mere curiosity to collect the dots and an encyclopedic memory to recall the dots are insufficient characteristics for successful SIs. They also must have the capacity to connect them, as illustrated by RDS viewing. While the dots themselves represent specific, factual, propositional explicit knowledge, the skill of connecting them represents tacit knowledge – it is a “know how” that the possessor cannot fully articulate. Such “know how” is akin to other un-articulable skills, including driving a car or a blind person’s use of a cane. While the skill cannot be articulated, it is no less a skill. “Systems thinking” and “connecting the dots” are not random guessing, but highly developed skills – the work of a master.

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3 Esther is a philosophy professor at Geneva college (http://www.geneva.edu/object/faculty_esther_mEEK)

4 Esther L. Meek, Longing to Know: The Philosophy of Knowledge for Ordinary People (Grand Rapids, MI: Brazos, 2003), p. 46ff.