

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



As we interviewed Serial Innovators (SIs),ⁱ the most frequently recurring themes expressed to depict the “know how” of innovation were “systems thinking” and “connecting the dots.” The SIs used these concepts again and again to describe the emergence of insight that they experienced in the act of innovation.

In many respects it is not surprising that they spoke of innovation in this way. As illustrated in Figure 1ⁱⁱ on the next page, they typically carry around with them countless “dots” – with these dots defined as pieces information about a vast array of topics, ranging from technical insights, to customer insights, to views regarding the marketplace, to an understanding of critical financial measures, to knowledge of manufacturing processes. As such, their “connecting the dots” across this mass of information and arriving at an innovative, breakthrough insight is truly a challenge. If it were easy, someone would have already done it.

It is important to note that the SIs did not view these concepts of “systems thinking” and “connecting the dots” as stepwise and linear. That is, they did not view “systems thinking” as following the flow of a material through a system or “connecting the dots” as the point-by-point connection of dots such as that found in children’s “connect the dots” books. Instead, the SIs’ understanding was much more powerful – it was best depicted as a parallel processing of information, in contrast to a step-wise processing of information. They viewed connecting the dots as an exercise in Gestalt thinking – looking at the whole, not the pieces – more along the lines of the Dalmatian illustration at the top of this page.

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

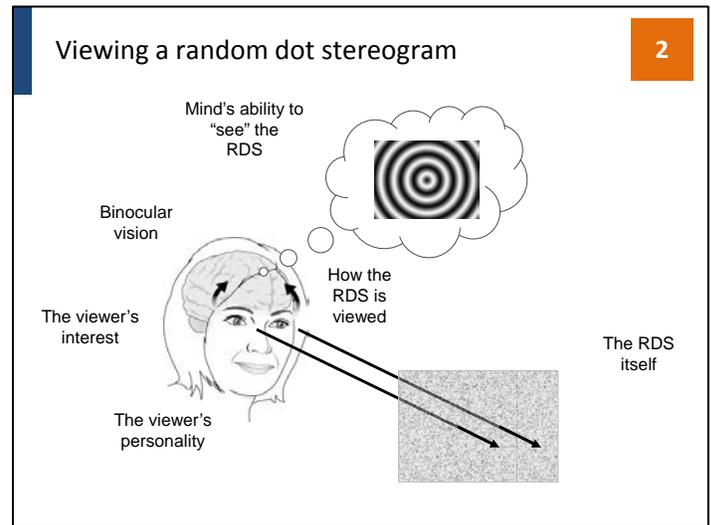
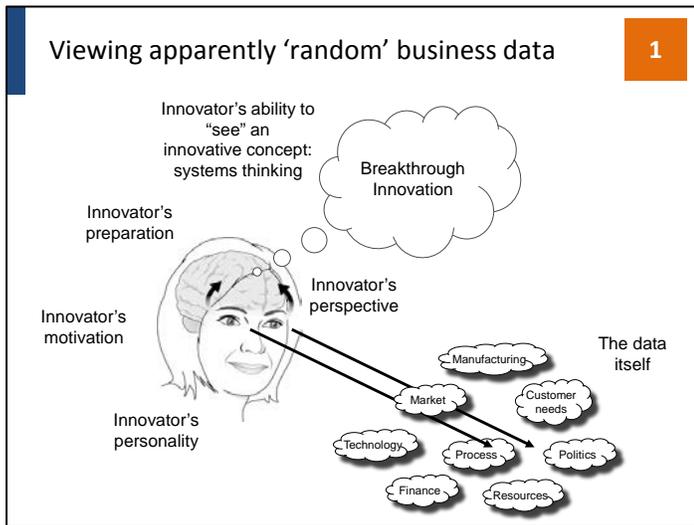
My friend, epistemologist Esther Meek,ⁱⁱⁱ offers an intriguing illustration of knowing^{iv} that captures much of what our SIs expressed as they spoke of their emerging awareness of breakthrough insights, the act of viewing Magic Eye®^v images (hereafter referred to as Random Dot Stereograms (RDS)). 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 ➤



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 with 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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ⁱ Abbie Griffin, Raymond L. Price and Bruce A. Vojak, Serial Innovators: How Individuals Create and Deliver Breakthrough Innovations in Mature Firms (Palo Alto: Stanford University Press, 2012).

ⁱⁱ Figures 1 and 2 in this essay originally appeared in: B.A. Vojak, R.L. Price and A. Griffin, "Corporate Innovation," in Oxford Handbook of Interdisciplinarity, R. Froedeman, J. Klein and C. Mitcham, editors (Oxford, UK: Oxford University Press, 2010). This referenced book chapter provides a more complete discussion of the Magic Eyes® metaphor as it is applied to corporate innovation.

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

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

^v Magic Eye, Inc., Magic Eye: A New Way of Looking at the World (Kansas City, MO: Andrews and McMeel Publishing, 1993).

"On the Epistemology of Innovation: How Breakthrough Innovators Connect the Dots" is a series of brief, occasional essays addressed to executives, managers, and technologists responsible for innovation in industry. Its purpose is to challenge readers to reflect broadly and deeply on the practice of innovation – in particular on how innovators come to know what to do today – in order to succeed commercially in the future. Essays are available without charge at the University of Illinois' digital archive at <https://www.ideals.illinois.edu/handle/2142/27667>. The discussion group at <http://epistemology-of-innovation.com> is a place to provide feedback and dialog with the author and others regarding these essays, as well as to register to receive notice of new essays as they are issued.