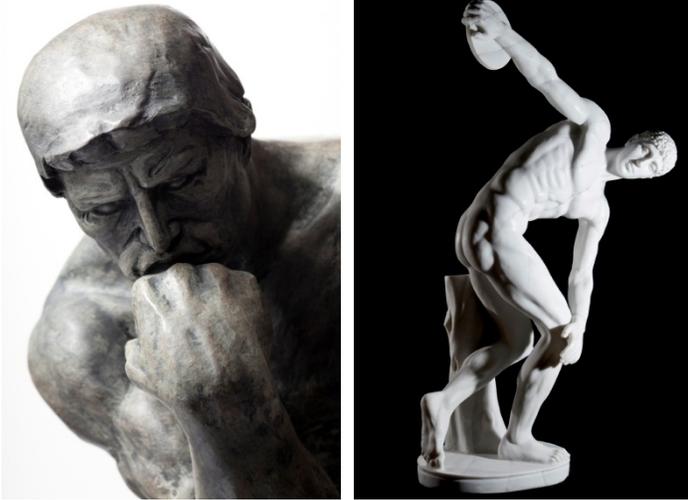


The types of knowing

What it means 'to know'

From 'know what' to 'know how' to 'know who' to 'know when' we use the concept of knowing variously



I've held off addressing some of the more common, formal aspects of epistemology in the first dozen or so essays in this series, preferring instead to just dive in to some less typically addressed perspectives. However, I believe it's now time to go back and cover some of the basics, as they illustrate the breadth and depth that even a brief consideration of traditional epistemology can provide.

Dating to the classical Greeks, epistemology – the study of knowledge and knowing – has been considered by many over several millennia and remains an active topic of consideration. The English language is unfortunately limited when we seek to express ourselves regarding the concepts of knowledge and knowing. There isn't just one type of knowing; we know variously. We know facts, we know how to do things, we know people and places, and we know when something must be done. While lists of the types of knowing can vary, a reasonably complete, yet simple, initial set includes:ⁱ

'Know what' is factual information, often referred to as propositional knowledge. Verbalized as 'I know that ...,' such information is of the type found in dictionaries, encyclopedias, and text books. In chemistry, it would include, for example, factual information about the elements and various compound materials, such as their density, atomic weight, and boiling or melting point. 'Know what' can be explicitly articulated. In some ways, we might suggest that 'know what' is a mental skill, represented in the photo of Auguste Rodin's 1902 statue, *The Thinker*, at the top of this essay.

'Know how' is an ability or skill that typically cannot be explicitly articulated, or at least cannot be verbalized simply. Examples of 'know how' include driving a car, playing a

musical instrument, and baking without a recipe. Note that 'know how' is an act, while 'know what' is a fact. In the same way that *The Thinker* can be seen to illustrate knowing with the mind, the statue of a Greek athlete at the top of this essay suggests an aspect of 'know how' that is physical and not completely articulable. Already we should be able to sense through these two photos that 'to know' has broad application.

'Know who' is knowing by acquaintance, such as how one knows a friend or family member, or even a familiar place. Such knowing differs from merely factual 'know what' knowledge about a person or place; it is deeper and more intimate, experiential and relational, than detached.

'Know when' is knowledge of optimal timing. Comedians must exhibit an excellent sense of timing when delivering ... a punch line. The same holds in many other situations, especially when it comes to interpersonal relationships and when to launch a product in the marketplace.

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Examples of what it can mean 'to know'

As with our observations about the knowing patterns of practitioners, popular authors and academics, these types of knowing often appear together as we reflect on what people know. This is illustrated nicely by Henrik and Daniel Sedin, identical twins who play for the Vancouver Canucks in the National Hockey League.ⁱⁱ Each is not only talented in their own right (the inarticulable **'know how'** and **'know when'** of skating, shooting and checking), but also has been playing the other for so long that they anticipate their moves in a manner described as a 'sixth sense' (the **'know who'** of intimate acquaintance from before birth). Each also has **'know what'** of the game, such as the rules and equipment.

Once you start looking for 'knowing', you find it everywhere. The inarticulable nature of a practitioner's skill (**'know how'**), developed over a lifetime in an industry, ►

was depicted last year in a Wall Street Journal piece on a 'master distiller'.ⁱⁱⁱ Another Wall Street Journal article from about the same time offered that "to understand the (American) Civil War on its 150th anniversary, history books are no substitute for time in the trenches" (i.e. personally visiting the battlefields) and that "when you stand in these spots, it's easy to imagine that other outcomes were possible."^{iv} These insights also suggest the difference between limited '**know what**' and a form of '**know who**', knowledge by acquaintance.

Notable events throughout history also illustrate aspects of knowing and, thus, are the thing of epistemology.

When vice-presidential candidates, Senators Lloyd Bentsen and Dan Quayle met to debate in 1988, Quayle likened himself to former president John Kennedy. Bentsen, who unlike Quayle had been a close personal friend of Kennedy's, rebuked him, 'Senator, I served with Jack Kennedy, I knew Jack Kennedy, Jack Kennedy was a friend of mine. Senator, you're no Jack Kennedy.'^v With this brief statement, Bentsen implicitly emphasized the difference between detached propositional knowledge ('**know what**') and intimate knowledge by acquaintance ('**know who**'); he also demonstrated the '**know how**' and '**know when**' of high stakes politics.^{vi}

Relevance to innovation

Exemplary breakthrough innovators 'know' variously. They know customer needs in a deep, intimate way. They know which problems will yield the most benefit to customer, colleague and shareholder. They know how to get to the point that they know what really needs to be done. They know who must be engaged for the product to succeed

and they know how to engage them effectively. They know when to push and when to pause.

But, wait, there's more ...

While this taxonomy of types of knowing should help us begin to get our arms around the various ways in which breakthrough innovators come to know what to do today – in order to succeed commercially in the future – there is more to unearth when it comes to knowing. Much more.

In the next essay, I will take another step along the way by discussing the so-called standard (and oldest) definition of 'know what' – knowledge as Justified True Belief. ■

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ⁱ Richard Feldman, Epistemology, Upper Saddle River, NJ: Prentice Hall (2003), pp. 8-9.

ⁱⁱ Reed Albergotti, "The NHL's Telepathic Twins," The Wall Street Journal (April 21, 2011), p. D8.

ⁱⁱⁱ Kamau High, "Distilling a Lifetime of Whiskey Knowledge," The Wall Street Journal (April 16-17, 2011), p. C11.

^{iv} Thomas Donnelly, "Refighting the Battle of Gettysburg," The Wall Street Journal (April 2-3, 2011), p. C3.

^v http://en.wikipedia.org/wiki/Senator,_you're_no_Jack_Kennedy

^{vi} Of note, the Wikipedia entry (reference v. above) summarized the impact of this exchange by suggesting that "(s)ince then, the words 'You're no Jack Kennedy,' or some variation on Bentsen's remark, have become a part of the political lexicon as a way to deflate politicians or other individuals perceived as thinking too highly of themselves." Interestingly, less than a week ago and 24 years after the Bentsen-Quayle debate, during the Biden-Ryan 2012 Vice Presidential debate, Vice President Biden appealed to this sentiment in an attack on Representative Ryan. That knowledge is more than the mere use of words or phrases as intended by the speaker was made apparent in Peggy Noonan's October 13-14, 2012 Wall Street Journal analysis of the debate, "'Oh, now you're Jack Kennedy!' (Biden) snapped at one point. It was an echo of Lloyd Bentsen to Dan Quayle, in 1988. But Mr. Quayle, who had compared himself to Kennedy, had invited the insult. Mr. Ryan had not. It came from nowhere. Did Mr. Biden look good? No, he looked mean and second-rate. He meant to undercut Mr. Ryan, but he undercut himself."

'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.