



Virtue ethics has been around for at least 2,500 years, and the classic work about it will always be Aristotle's *Nicomachean Ethics*. However, contemporary proponents must address a wide range of additional issues and objections that have come up over the intervening centuries, including those raised by modern alternative approaches like deontology and consequentialism ("Rethinking Engineering Ethics," November 2010). Furthermore, there are now multiple strands of virtue ethics, each with its own unique aspects ("Engineering Ethics as Virtue Ethics," May 2011); some of them are obvious, but others can be quite subtle.

One recent and comprehensive attempt to ground and defend an Aristotelian form of virtue ethics, as well as a corresponding theory of the virtues, is a 2009 book by philosopher Daniel C. Russell: *Practical Intelligence and the Virtues*, published by Oxford University Press. Russell does not actually construct a complete virtue ethical system; instead, he explores a number of criteria that one would need to satisfy in order to be viable, and then contends that only what he calls "hard virtue ethics" can fit the bill. As his title suggests, an essential feature is practical intelligence – what the ancient Greeks called *phronesis*, which I typically translate as practical judgment ("Knowledge, Rationality, and Judgment," July 2012).

Russell tackles head-on two of the most common and difficult challenges to virtue ethics, acknowledging that it must ultimately be established as both *normatively* and *empirically* adequate. In other words, it has to provide a satisfactory account of what makes an action right, and it needs to be consistent with the latest and most widely held scientific findings about human psychology. The book argues – convincingly, I think – that hard virtue ethics satisfies these two fundamental requirements.

What primarily distinguishes all types of virtue ethics from the alternatives is, "roughly, that right action is defined in terms of the virtues, but not vice versa." This is often summarized by saying that the right thing to do in any given scenario is whatever the virtuous person would do. The chief role of practical judgment is *specificatory* – deliberating and ultimately deciding what *constitutes* acting virtuously in a particular concrete situation; in other words, ascertaining what Aristotle called "the mean," that which "is 'fitting' or 'appropriate' to the circumstances at hand." Each virtue has distinct "targets" at which it aims, and *phronesis* is necessary in order to hit these targets reliably – including the coordination of multiple virtues and their different targets, which may at times appear to be in conflict with each other.

Some claim that this sets the bar too high, since there is clearly no such thing as a single person in the real world who fully possesses *all* of the virtues. In fact, Russell acknowledges that no single person fully possesses even *one* of the virtues; most notably, practical judgment itself. He addresses this by describing virtue as "a vague *satis* concept," invoking the Latin word for "enough"; there are degrees of having it, as well as a sense in which it is not necessary to have it fully in order to have it legitimately. To be virtuous, it is sufficient

to be virtuous enough, and to have *phronesis*, it is sufficient to have *phronesis* enough; but there is no definite boundary in either case. The fully virtuous person is thus an idealized model, "a standard by which scales of virtuousness are calibrated."

Of course, engineers deal routinely with vague *satis* concepts – although that term is probably unfamiliar – and idealized models. For example, structures do not have to be *fully* strong, whatever that would mean; they simply must be strong *enough*. As Hardy Cross famously put it, "Strength is essential, but otherwise unnecessary." More generally, engineered projects and products need not be *fully* safe, sustainable, and efficient ("The Internal Goods of Engineering," March 2013), whatever that would mean; they simply must be safe, sustainable, and efficient *enough*. Practical judgment – i.e., engineering judgment ("The Intellectual Virtue of Engineering," July 2013) – is necessary in order to convert these indeterminate ends into determinate ones for any particular case, and to select the features that must be included or may be excluded from an engineering model accordingly.

What about the second criterion for a successful virtue ethics approach? The current paradigm in social psychology is situationism, which holds that contextual variables are far more significant for determining people's behavior than any allegedly enduring dispositions. At first, this seems like a direct contradiction of the concept of virtues as traditionally understood. On the contrary, Russell explains how situationism is not merely compatible with hard virtue ethics, but actually favorable to it. Personality is now recognized as "one's tendency to behave for certain sorts of reasons," rather than just "in certain observable ways," and the virtues are precisely "practically intelligent forms of responsiveness to reasons." The kinds of reasons that are associated with various virtues serve as the basis for individualizing and relating them.

Each virtue is thus "a bundle of cognitive-affective processes by which one seeks the right goals, attends to the right features of situations, and so on, and adjusts one's actions accordingly." For example, someone who characteristically exhibits generosity is properly responsive to the reasons there are to be generous. Likewise, engineers who characteristically exhibit objectivity, care, and honesty ("The Moral Virtues of Engineering," May 2013) are properly responsive – both intellectually and emotionally ("Risk and Virtue Ethics," January 2014) – to the reasons there are to be objective, caring, and honest. Perhaps the most significant of these is the public's tacit reliance on all engineers to assess, manage, and communicate risks on their behalf. ■



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