

## Book review: Ratti, Emanuele; Stapleford, Thomas (eds.) (2022): Science, technology and virtues

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Published in 2022, the book “Science, Technology, and Virtues. Contemporary Perspectives” by editors Emanuele Ratti and Thomas Stapleford stands out in contemporary cross-sectional examination of technology and science. Most volumes in this field undeniably give into value-talk, but peculiarly refuse any insights into associated concepts and ideas. With Ratti and Stapleford, fourteen diverse contributions apparently swim against a current by staging the interchange of virtues, science, and technology as an important research perspective.

### Virtue as means of inquiry

Putting together a collection seems almost as complicated as reviewing it in its entirety – particularly when the editors defensively anticipate valid criticisms in the editorial. On the one hand, the editors claim that virtues and vices are stale (p. 1); on the other, they deny that a unified approach would be necessary (p. 6). Despite the premise that ‘virtue’ makes an interesting research perspective, a common starting point, a shared aim, or a collective goal is missing (p. 5). So, how to cope with these challenges? The editors suggest choosing what might be helpful in one’s own interests in the topic (p. 6); more a jump into the cold water than a systematic first step into the topic.

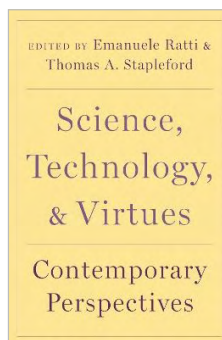
It is then the first article that reveals the basic interrelationship of virtues, science, and technology which the editorial left out. Taking stock of historic cases, Richard Bellon (p. 17) untangles in what manner traditional concepts and ‘the good life’ play out in pre-modern research practice. He takes his readers on an expedition on how ‘man of science’ as role and as status of the gentleman scientist inhibited Victorian British Science. But, a standard dogmatic conception is inherent to Bellons’ inquiry: Traditional concepts of virtues assess the character of a

person, or an action for (moral) judgement related to teleological ideals. Giving intelligent cases along with a detailed examination of fundamental concepts like purity and truth in science, this text is not only good reads in history and philosophy of science but instructive for further inquiry.

Meanwhile, e.g. ideas of ‘epistemic virtues’ have long been washed into descriptions of theories, of methods, and of processes to grasp their overall style and quality, especially in (post) modern science. Ratti’s analysis of instances of ‘virtue-talk’ (p. 149) features this extended conceptional use and highlights the epistemic aspect of scientific activities. In everyday situations ‘in science’, so the story goes, considerations arise that can be captured and described well with (adapted) concepts of virtue. Whereas multifold concepts and their descriptive capacity are acknowledged by a host of literature, only seldom systematic discussion of the underlying ideas occurs. To fill this gap, a detailed overview of the prominent theories is provided, which concludes with a brief exploration of shortfalls, idealization, and misconceptions. In doing so, two concepts of virtue (virtue as excellence and virtue as character) are distinguished. Though attractive, that separation does not concede when value- and virtue-talk converges within the argument.

Within technology assessment, it is acknowledged that different valuing practices have been established throughout disciplines involved. Within all these practices, ‘values’ in a broad sense are analyzed because they bring to the fore normative constraints that are at play under the sociotechnical condition co-shaping science and technology. The power of value-talk lies in addressing, examining, and managing conflicting interests and hidden prerequisites.

Values can entail virtues, but must not – assessing virtues without weighing them is nonsensical, so valuing comes back in. However, virtues allow a different way of proceeding when related to, e.g., science and technology: While value concepts allow distinct separation, concepts of virtues foremost restrict analytical subdivisions and management approaches. They highlight diversity of correlations and the interplay of conditions. Three texts in different subsections elaborate concepts of virtue in that regards and use ‘virtue’ as signifier to illustrate the complexity



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of cases at hand: Stapleford and Hicks (p. 37) as well as Pennock and Miller (p. 58) and Schmidt (p. 117) assess scientificity writ large through the lenses of Alasdair MacIntyre's virtue theory. Their discussion could integrate especially well with technology assessment practices – if it were not for the essayistic style that prevented going into detail on major concepts and their relation. It remains unclear what re-tooled 'virtue' implies and where it is connected to practices other than the cases at hand.

While questioning whether 'failing better' is an indicator for scientific virtues Jutta Schikore (p. 178) bypasses these discussions: How perception of failure and success co-shape practices in and theories of science opens up yet another perspective on how science, technology, and virtues can conflate. E.g., 'trial

the question of the epistemic status of failure, a mature concept of 'virtue in practice' could be well applicable to TA.

Dana Tulodziecki (p. 200) relates virtues to the more general, contemporary epistemological debate about foundations of scientific knowledge and scientific activity. She takes up a variety of issues (truth-conduciveness, complexity, parsimony) but insists on a concept of virtues that is empirically assessable and relevant for the philosophical debate on theory choice (why and how scientist utilize theories, esp. when equally promising or potent). Not going into detail on what that leads to for virtue theory, she argues for a non-pragmatic account of virtue assessment that enriches the debate on the wide range of aspects that enter epistemic activity altogether. In that regard, her concep-

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and error' still is a go-to epistemic pathway, not restricted to early research phases – but how to cope with it in standardized academic trajectories? What is the epistemic status of these activities that do not translate into impact figures and success stories? With technology assessment (TA) activates a multiple dependent set of diverse forms of expertise flow together. A concept of virtue that takes this into account could be very useful for this purpose.

### **Virtues in practice**

Certain texts are exceptionally striking because of their 'virtue assessments': Martin (p. 97) contributes a survey exploring the topical formation of 'mindfulness' as a virtue when related to technology. Mindfulness in his sense idioms "paying attention to what matters in the light of relevant values" (p. 114). His argument interweaves various aspects of relating virtue, science and technology, that many other texts in this book indeed bring up. In the end, he joins traditionalists' virtue theorists, which does not diminish the depth of the text and its relevance for the discussion in this book.

Countering anything traditionalist, Laura Ruetsche's text "Virtue and Contingent History" (p. 161) straight forward motivates connecting a special way of reading Aristotelian and Bayesian takes on epistemic capacities. Showing how traditionalist (in the sense of mainstream) epistemology of science is blindfold and limited, she carves out a systematic incompleteness of said theories using her concept of virtues. She then suggests incorporating feminist epistemology (Harding, Haraway, Longino), as well as aspects of modern Aristotelian moral theory (McDowell) to fill the gap and reestablish a more relevant version of epistemology of science. Virtue, by her definition is the capacity to track context (p. 166). This idea aligns with other efforts remarrying science studies and 'that is what scientists do', which is especially current in the philosophy of science. As with

tual work is instructive for thinking about virtues in an interdisciplinary collaborative research environment: Any TA activity already copes with diversity of knowledge acquisition and transferal, nonetheless specific concepts that could capture this richness are rarely available.

### **Different takeaways for different readers**

Throughout the four thematic sections contents more or less heavily rely on recent notions of 'science in practice' as if 'topical' could indicate 'standardized'. One might well get a good glimpse at Alasdair MacIntyre's value theory, since half of the texts in this collection emphasizes his works. Giving that the book originated at a workshop at the University of Notre Dame in 2018, this might be explained by vivid discussions had back then – but it now impedes the reading flow of any not-so standalone original papers. In a row with that are texts compressing ideas into a few pages that elsewhere fill entire books. These short-forms of arguments are informative and can invite a reading of the respective work – however, an editorial epilogue that collects the scattered parts, different types of texts, and variety of concepts presented would have helped. Beyond all points of criticism, the reading is clearly recommended if one is seeking an insight into the interchange of virtues, science, and (some) technology.