

ON UNCERTAINTY AND ENTERPRISE AS VENTURES  
BEYOND THE KNOWN: A REVIEW OF AMAR BHIDÉ'S  
EPISTEMOLOGICAL FIELDWORK

ABSTRACT: *Amar Bhidé's Uncertainty and Enterprise: Ventures Beyond the Known, contributes handsomely to many registers: it contributes in the main to risk and uncertainty, to industrial organization, to probability theory but obliquely, to history of postwar economic thought more directly, to narratology in considerable measure, to pedagogy most certainly, especially as it revolves around the so-called "case-based method," to epistemology by implication, to name only a select few. Furthermore, by virtue of style and format, the book can also be seen, and used, as a general text to orient the lay reader (not to speak of business school students as well as budding economists seeking mainstream credentials) into the disciplinary room Bhidé sees and calls as his own.*

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M. Ali Khan, akhan@jhu.edu, Abram Hutzler Professor of Political Economy, The Johns Hopkins University, Baltimore, MD 21218 USA. The author is grateful to Editor Samuel DeCanio for his invitation to write something for inclusion in this special issue of the journal devoted to Amar Bhidé's book, and for his patient and unswerving persistence. Furthermore, he thanks Amar Bhidé for his encouragement and correspondence, and his students over the years, especially those at the New School for Social Research, for giving attention to his teaching of Debreu's *Theory of Value*. Finally, he thanks Salim Rashid also for his careful reading, and Ehtisham Ahmed, Talal Asad, Bob Barbera, Akeel Bilgrami, Aniruddha Ghosh, Khalid Ikram, David Levy, Rohit Parikh, Arthur Paul Pedersen, Asghar Qader, Pamela Reynolds, Eddie Schlee, Eric Schliesser and Arshad Zaman for enlightening correspondence over many years regarding the dissonance between *literary* and *mathematical* economics, and especially when the author's spirits were sagging.

Keywords: *Knight; Savage; Friedman; Arrow; Cournot; Keynes; Simon; Ellsberg; Kahneman; Tversky; Thaler; Samuelson; Koopmans; Debreu; Nash; Bewley; Myerson; Wittgenstein; Celenza; Humboldt; Newman.*

Spectators see more of the game than players do.

Rahman (2014)<sup>1</sup>

You know what the most dangerous thing in the world is? What? I asked. A story, replied my father. I'm not kidding. Stories are dangerous. And I don't mean stories whose messages are capable of endangering. I mean that the form itself is dangerous, not the content.

Rahman (2014)<sup>2</sup>

Philosophers talk about solving problems, continued my father, but also about dissolving them. Wittgenstein, for example. Sometimes, when properly regarded, the problem in front of us is understood to be no problem at all, or at least not of the kind we believe it to be. We tend to favor the status quo.

Rahman (2014)<sup>3</sup>

If the province of science is how?, continued Zafar, then the rigor of life, the predicament of living in the world, is contained in the question why? Wittgenstein said that when all the questions of science have been answered, all the problems of life will still remain.

Rahman (2014).<sup>4</sup>

Amar Bhidé has written a postmodern gem that ought to be read by all social scientists, in so far as they constitute a category different from humanists, and especially by those social scientists who sit at an angle to "economics" and are curious about the mainstream of the economics profession. To be sure, *postmodern* is a contentious term.<sup>5</sup> A recognized authority renders it thus:

What then is the postmodern? What place, if any, does it occupy in the vertiginous work of questioning the rules that govern images and narratives? It is undoubtedly part of the modern. Everything that is received must be suspected, even if it only a day old. ("Modo, modo" wrote Petronius)<sup>6</sup>

However, *pace* Lyotard, the *Stanford Encyclopedia of Philosophy* begins its 2015 entry with the assertion: "That postmodernism is indefinable is a

truism.”<sup>7</sup> In this reading of Bhidé’s “ventures beyond the known,” I shall simply take postmodern to mean an anti-authoritarian disposition that leads the author to write not only against the grain but also to test his claims and theses by trying them out on his own writing: on how well each claim rebounds to the veracity of the claim itself, measures all that it wants measured but with the healthy awareness that his instruments of measure by necessity fall short of their task. It is a return to a reflexive and ironic mode.<sup>8</sup>

But to get from generalities to the particulars, the abstract to the concrete, Bhidé’s book, henceforth U&E, has five thematic parts: an invitation to a voyage; the formidable obstacles and forgotten beacons to be kept in mind during the voyage; a voyage involving specialization of enterprise, on the one hand, and drawing on imaginative discourse, on the other; and finally a coda that begins with the voyager of voyagers, Sir Francis Bacon. The heart of the book is its second part of eight chapters, which constitutes a third of the composition, with a third part of five chapters taking up another quarter, and a fourth part of four chapters taking up an eighth. All this material is rounded off by the first part of four short chapters, and a fifth single-chaptered part of 20 out of 400 pages. The reader is made to shuttle from texts to topics and treated to the author’s erudition and enviable fluency and facility of style, and at times one has constantly to struggle to understand how all of this material is to come together as regards “uncertainty and enterprise.”

So how to proceed in representing this struggle? To be sure, I could have asked what I as a reviewer is expected to ask: to where is this voyage being undertaken? For whom? To what purpose? What does it presume? How is it go about its business? What are its expectations? What are its expected findings and discoveries? And if rather than a prospectus, it is a report on a voyage already undertaken, how what I find can be taught, texted and taken-away. In this review, I shall take a different, perhaps unconventional tack: rather than interrogate the author from a position of evaluative authority, with an obligation to relate the author’s work to my own – use it as a platform for myself – I shall let the author speak as much as I can, and hear and read his own voice and words. This will be the first part of the review.

The second part of the review turns to a justification of the word “fieldwork” in my title, but my discussion is qualified by both epistemological and anthropological registers.<sup>9</sup> In regard to the first, I give voice to my own authorities on what it means to “know” and to be “certain;” and

second, to my own understanding, prejudices, and priors, to what I, as a practicing academic in an economics department, think to be what U&E refers to as uncertainty-free mainstream economic theory. Finally, remaining with pedagogy and disciplinary boundaries, I turn to a decanal authority on the location of the humanities in the Italian renaissance. The voices I invoke are not cited in Bhidé's extensive bibliography of more than 20 pages, and yet I see them both relevant to his enterprise and to his achievement.<sup>10</sup>

### *I(i)*

Part I of U&E, titled "Invitation to the Voyage," begins with two images, one a "Frame for the Title or the Dedication of a Music Book, or a Program of or an Invitation to a Concert," (circa 1750); and the other a reproduction of John Henry Twachtman's "Woman on the Quay, Honfleur" and labeled as Quai d'Knight, (circa 1883-1884). In an elaboration, the author connects his images to Charles Baudelaire's 1857 poem "L'Invitation au Voyage" published in a book denounced as "an insult to good manners."<sup>11</sup> On asking what all this imagery is to serve, I realize that Bhidé is signaling that he is a little conflicted about Knight, and also about the mainstream profession that claims Knight as their own.<sup>12</sup>

Already in the notes to his preface, Bhidé (2025, 337) identifies "Frank Knight as the hero of this book," and claims that he sails from "Knight's 1921 dock, but not on Knight's 1921 ship (ix)."<sup>13</sup> In the first of Bhidé's (2025, 9) four chapters, there is a description of the commodity that is on offer: "a prospectus for modernization: a modification of Knight's concept of uncertainty, conjectures that follow from this reconceptualization, and the application of my conjectures to entrepreneurship." Names and dates can be appended to each of the following three chapters: Hayek (1945) on uncertainty as doubt, Bhidé-Datar-Stebbins (1920-1921) on conjectures about justifications, and finally, Baumol (1968) on enterprise.

In his famous lecture on ethics given on his return to Cambridge in 1928, Wittgenstein emphasized that if his audience is to understand him, it must know him and know where he is coming from. If the reader of U&E is to know who Bhidé is, and where he is coming from, and has time for only one chapter, this offering in the first part of his book would surely be the one. It is sectioned under the three

headings (i) elusive prospect, (ii) unradical aims and (iii) crossover readership. In this section Bhidé (2025, 6) specifies what his manifesto is not:

While my perspective and methods are unconventional, my project isn't radical. I aim to stimulate inquiry into neglected questions about the role of uncertainty in human affairs and improve our understanding of how to manage it. I do not offer grand theories or manifestos. Instead, I propose some conjectures about the justification of imagined choices illustrated by applications in entrepreneurship. My conjectures and applications also complement rather than challenge mainstream economics; I have no interest in overthrowing the results of its uncertainty-free theories. Instead of refuting existing theories, I focus on what mainstream economics can't easily examine or explain.

These sentences merit careful reading and reflection: Bhidé uses the word “mainstream” twice already in this paragraph and submits a partial identification of it as uncertainly-free theories being its bedrock.<sup>14</sup> But there is more of a self-revelation to follow under the rubric of the word “abductive,” which Bhidé (2025, 7) defines as a “form of non-monotonic reasoning that has gained increasing interest in the last few years.”<sup>15</sup>

My contextual, “abductive” reasoning and “narrative mode” discourse may trouble economists and other social scientists more than my conjectures and applications themselves. I make no apologies. Facts that aren't numerical and evidence about unique circumstances affect what we routinely do and how confident we feel about our choices. They deserve a place in accounts of our economic and social conduct. That such facts and evidence resist mathematical or statistical treatment does not justify their exclusion.

There is a concurrent commitment to qualitative thinking and to trans-disciplinarity in the explanation of human conduct. As Bhidé (2025, 7) notes:

Much of human reasoning and discourse has, throughout human history, included such facts and evidence. Adapting how the older learned professions — law and medicine — use nonnumerical contextual data and “think in cases” can broaden our understanding of human conduct.

Bhidé has very much his potential readership in his sights, as he must: he is putting out a product after all, and the seller is well-advised to have some idea of the demand conditions of the commodity he is bringing to market. Bhidé (2025, 8) states:

Anticipating a diverse — if select — readership, I have organized this book into modular parts. The text also includes shaded boxes to enrich and enliven the main text through biographical sketches, in- depth examples, and technical explanations. The shaded boxes can be read in the order in which they appear, postponed for later perusal, or, depending on the reader's interests and expertise, skipped.<sup>16</sup>

The reader is in the company of a sophisticated raconteur, and perhaps an even more sophisticated analyst who “mistrusts certitudes.” However, rather than going to his other chapters, let me conclude this subsection by jumping to Footnotes 6 and 7 in the last chapter of this first part of Bhidé's book so as to underline emphasis on communication and storytelling, and thereby connect to my second epigraph:

Knight's *Risk, Uncertainty and Profit* does not discuss the role of stories or other forms of rich communication, although in his later work on political philosophy, Knight treated discussion (rather than voting) as the essence of a good democracy but was critical of “persuasion,” which he saw as coercive (Knight 1940).

Recent work by Robert Shiller (2017) and (2021) on “contagious narratives,” by David Tuckett (2022) on “conviction narratives,” and by Kay and King (2020a) on “reference narratives” exemplifies the advantages of taking stories more seriously.

These two quotes are simply teasers for the lay reader, and we shall meet these gentlemen again in Parts IV and V of U&E. For now, let me now move on to discuss Part II of Bhidé book.

### *I(ii-a)*

Part II of U&E, titled “Formidable Obstacles, Forgotten Beacons,” also begins with two images: of Miner Kilbourne Kellogg's Lighthouse, Civitavecchia painted in 1843, and of Henry Wolf's North-Easter, painted in 1908. The author does not elaborate on his use of these images, but leaves it to the reader to determine how these images depict the obstacles and the beacons represented in this part of his book.

In this section Bhidé reads Frank Knight as the spark that did not ignite, Keynes as distraction, Simon as a fading guiding star, Ellsberg's ambiguity as a simplifying side trip, Kahneman-Tversky as dropping uncertainty in gaining acceptance, Thaler & Co. building the new behavioral boomtowns. However, two of these eight chapters stand out as not

being graced by any proper name, and I shall bracket these two for a while, and turn to the six above-mentioned authors that constitute invaluable material for writing a history of post-war economics to update, if not rival, Schumpeter's.<sup>17</sup>

The fact that this part of Bhidé's book begins with Knight and with his distinction between risk and uncertainty, and with Keynes' skepticism about the very quantification of risk and uncertainty is no surprise: even a mainstream economist would expect it. This is equally so regarding the paradoxes of Ellsberg and Allais: given the current rage in the economics mainstream with Bayesian decision theory, this is only to be expected in a book titled by "uncertainty and enterprise." But it is really Bhidé's chapter on Simon that connects the two words of the title, forming the hinge between the first four chapters and the last three. Bhidé clarifies how "Simon's ideas, ignored by mainstream economics, provide useful steppingstones for [his] project," and in his bridging of Chapters 5-8 and 10-12, writes:

To appreciate the nature of the currently dominant view, it will help to first examine what it eclipsed. Specifically, this chapter reviews how and why Simon examined realistic reasonableness — rationality "bounded" by unavoidable limits to what we can know (i.e., uncertainty) and process.

Bhidé (2025, 97) connects Simon to Knight, who "had anticipated many of the biases and quirks studied by contemporary researchers — and noted how uncertainty magnified their effects. Knight also proposed a "middle way" methodology to limit the practical risks of theories that assume away biases, quirks, and uncertainty."<sup>18</sup> The point is clear: this part of U&E is a history of economic thought: it takes interwar pluralism to post-war neoclassicism and beyond, with uncertainty and enterprise as its subtext. As to the validation of the bridge, let me conclude this section by quoting Simon's (1991, 138) own words:

We were social scientists who had discovered in one way or another that organizational and business environments provide a fertile source of basic research ideas, and who therefore did not "basic" and "applied" in antithetical terms. Accurately or not, we perceived American business as a wasteland of vocationalism that needed to be transformed into science-based professionalism as medicine and engineering had been transformed a generation or two earlier ... The postwar flowering of management science and of the behavioral approach to organization theory provided the substance of applied science that we needed.<sup>19</sup>

This extensive quote is a fitting transition to the two chapters of Part II that I have bracketed in my discussion so far.

*I(ii-b)*

It is well to begin by asking the reason for this fissure in my reading? It is to signal and highlight a possible potential misreading, a warning to the general reader of a pitfall into which my own reading fell, of going overboard and regarding the book to be more than it is. Let me explain.

Chapter 6 is titled “Practically Omniscient Microeconomics,” and Chapter 7 “Imperfect Market Theories: Realism without Fallibility” and the reader may be forgiven for thinking, given all the talk of the “mainstream” and of “uncertainty-free and deterministic economic theory,”<sup>20</sup> U&E will be relying on these titles to elaborate/target Smith, Walras and Pareto on the one hand, and Cournot, Edgeworth, Chamberlin and Robinson on the other. The point is that expecting the book to serve as a text in the history economic thought goes some, but not all, of the distance. The author’s purpose is to recruit as well as retrieve: his gallery of intellectual pioneers in this section of the book is intended to provide a case study for the conclusion he seeks to draw. For this, he surely needs Knight and Keynes, and he also needs Ellsberg, Kahneman-Tversky with Thaler in tow. But he also needs von Neumann-Morgenstern, Friedman-Savage, and some old and new figures in industrial organization and in the economics of information – Bhidé needs them for purposes more than merely considering what is now termed the Arrow-Debreu model and refinements of game theory. Reading Part II as an intellectual history angled to current mainstream economics, while not a misreading, is in some danger of barking up the wrong tree. In U&E Bhidé (2025, 52) begins Chapter 6 thus:

I am concerned about the fallibility and disagreements arising from missing information (e.g., wrongful convictions or hung juries in trials when the evidence is entirely circumstantial) and the implications for entrepreneurship. Friedman and Savage’s personal probabilities and the microeconomics they support keep this out: they ignore ignorance, mistakes, and disagreements. Yet as we see in this chapter, this microeconomics has become paradigmatic.

The chapter is divided into three sections examining how (a) personal probabilities became a building block of the subjective expected utility

theory, as well as (b) a cornerstone of the modern neoclassical economics paradigm, and how it (c) conflicts with his modernization project (Bhidé 2025, 52–3).

Chapter 7 has a similar tripartite structure, but also includes a timeline: (a) the fifties, when “theories attributing profit to the market power of oligopolists (rather than Knightian uncertainty) flourished,” (b) the seventies, when “information economics,” emerged in the 1970s, rejected the all-knowing actors of earlier microeconomics and (c) the year 1987, when “Knight’s 1921 thesis to conform to the by-then-entrenched focus on asymmetric information and incentives was radically reframed in a telling deconstruction.” Bhidé (2025, 60) notes that the eclipse of Walrasian general equilibrium theory in the mid-seventies could have led to a renewed focus on genuine uncertainty but “in practice, however, information economics research focused on asymmetric information and misaligned incentives.” Bhidé notes:

This chapter examines two theories that became popular after Savage’s subjective utility helped constitute the discipline’s paradigm. Although the theories questioned the “invisible hand,” perfect-competition implications of the prevalent paradigm, both were assimilated into mainstream economics. The paradigmatic tent was apparently big enough to accommodate well-behaved skeptics. Both theories also excluded or neglected uncertainty.

What the mainstream tent was averse to was an accommodation of Knight’s concerns about knowledge. Bhidé (2025, 67) invokes Phelps to underscore his assertion in its contrast of the divergent mindsets of the two “Austrian” icons: von Mises and Hayek, each of which had similarly divergent mindsets: “The arguments of Hayek are knowledge-based, while those of Mises were incentive-based.”<sup>21</sup>

### *I(iii)*

Part III of U&E, titled “The Specialization of Enterprise,” begins with a reproduction of Charles Dudley’s painting of the “Atlantic Telegraph Cable Fleet 1866” as an invocation of what the author considers “one of 19th century’s great technological achievements,” and also as a metaphor for the “diversity symboliz[ing] the entrepreneurial ecosystem that produces much of modern innovation.”<sup>22</sup>

This part of U&E is composed of five chapters, and constitutes perhaps the book's central contribution. This section draws on Bhidé's expertise in the case-based business school instructional system. Chapter 13 starts however, by taking a breather, so to speak, and recapitulating all that has gone before regarding uncertainty, and a preview of what is to follow. The next four chapters constitute a veritable landscape of what Bhidé thinks what Industrial Organization should be, and how the subject ought to be taught in the US and Europe, but here again the first chapter of this part of U&E, titled "recapitulation and conjectures" is an ideal entry into these topics. This section includes discussions of a (i) repurposing of incentives, a (ii) recapitulation of conjectures, and a (iii) preview of an application. I single out only subsection (ii) where Bhidé (2025, 172) outlines a program for a study of different types of doubt: uncertainty as doubt, targets and sources of doubt, and disagreements on doubts.

Uncertainty about what is or could be can spur discovery, innovation, and enterprise. But uncertainty can also produce disagreements by prompting quirky responses, as Knight's and Elster's analyses suggest. Differences may arise without quirks because individuals with different imaginations and prior experiences fill in gaps in their missing information differently.<sup>23</sup> And different reactions can hinder collaboration even if there are no information asymmetries or conflicts of interest (except in some tautological "private benefits" sense).

The concluding three paragraphs of the chapter are also well-worth reading and imbibing as I move forward, I reproduce selections.

Behavioral quirks may amplify misjudgments and encourage stricter due diligence and oversight, but they are not pivotal to my applications. And as before, I exclude concerns about Rumsfeld's "unknown unknowns" and cataclysms such as out-of-nowhere pandemics and revolutionary possibilities. I focus instead on missing information about known unknowns, such as the demand for a new product, that make the prospects of a new business uncertain.<sup>24</sup>

Contextual information (about known unknowns) and its analysis are more important in my applications than statistical data and inferences. Entrepreneurial choices... must lean heavily on heuristics, analogies, abductive inference, and other nonstatistical consideration of contextual factors.<sup>25</sup>

My entrepreneurial applications themselves use abductive inference rather than deductive reasoning. The credibility of my propositions

depends on their fit with contextual and historical data ... and I do not claim any timeless, universal validity for my results.<sup>26</sup>

I read Chapter 9 on Simon as a hinge on which the other chapters of Part II revolve. I can read the entirety of Part III as the bridge that connects Part II with Part IV. I am now well-primed and well-placed as a reviewer to go to the next part of U&E.

*I(iv)*

Part IV of UEV, titled “Imaginative Discourse,” begins with a reproduction of Henry Wolf’s 1897 painting of Columbus at Isabella’s court, but without any discussion of why it begins this part. Presumably the reader is intended to think of Columbus’ persuasive powers. This part of the book contains four chapters and focuses on discourse. If Frank Knight is the hero of U&E, Jerome Bruner is the hero of this part of it.<sup>27</sup> What is interesting and worth mulling over is how Bruner connects to U&E, to uncertainty and enterprise and to ventures beyond the known.

Chapter 18 develops conjectures regarding the aims of discourse as leaning on “Bruner’s literary and legal applications provide an excellent foundation — and foil — for analyzing entrepreneurial discourse.” More specifically, Bhidé (2025, 259–60) reviews “Bruner’s distinction between narrative and logico-scientific modes of thought and verification” and uses it to “examine the aims and sub-aims (the “ends”) of entrepreneurial discourse.”

Chapter 19 is a continuation of these themes: Bhidé extends Bruner’s analysis to follow the narrative mode, and throughout his book, Bhidé notes that he is “seeking plausibility, not logico- scientific verifiability for my arguments.” Bhidé (2025, 268) claims:

The content of entrepreneurial proposals and plans — how details and their ordering help reduce doubts. Evocative devices — the figurative language and metaphors promoters use to make imagined and hoped - for outcomes seem real. The performance of the discourse — the influence of its careful staging before audiences and in interactive conversations.

Chapter 20, titled “Stories as side-dishes,” represent Bhidé’s “narratology” in its full stride. In a self-reflexive mode, Bhidé looks at himself: “why [he] should have questioned conventional views about entrepreneurial stories— but didn’t, how Bruner’s austere definition of stories

produced doubts about their centrality in entrepreneurial proposals and plans, and how he [has] now realized that his teaching, research, and writing have always followed Bruner’s ‘narrative mode.’”<sup>28</sup> Bhidé (2025, 283) notes how “Scholars now also use ‘narrative’ for specialized purposes [and] write about reference narratives and conviction narratives.”<sup>29</sup>

The specialized framings often do not mention “events,” and none felt right for my analysis of entrepreneurial storytelling. Attempting to distill any meaning from popular usage also seemed futile. “Narrative” is now routinely used to label any widely held belief. For example, “deflation narratives, racist narratives,” or “disinformation narratives” are used as slogans to warn about some dysfunctional possibility.

Chapter 21 is titled “Spillovers from stories,” and it does indeed concern different types of stories – literary, legal and entrepreneurial – and considers how they change over time in keeping with changes in expertise and specialization.<sup>30</sup> With an eye on business schools, Bhidé (2025, 305) writes:

Business schools consume and spread stories packaged as case studies. Every business school I know of, including those whose faculty disdain “storytelling” research, uses story-infused case teaching to some degree. Low-cost storytelling makes the *Harvard Business Review* (HBR) an especially profitable money-spinner for HBS (Harvard Business School).

As a former Professor at the HBS, he settles some scores: HBR is cited eight times in the text and another eight in the notes to this chapter.<sup>31</sup>

*I(v)*

Part V of U&E, simply titled “Coda,” begins with an image of the frontispiece of Francis Bacon’s *Instauratio Magna* of 1620. And unlike his other beginnings, he holds forth at some length on the image. Bhidé (2025, 313) writes:

Sir Francis Bacon (1561–1626) was a key figure in the Scientific Revolution, a movement that challenged the authority of ancient knowledge. The engraving on the title page of Bacon’s 1620 book (above) provided “one of the most vivid iconographical statements of new optimism about the possibilities and the extent of scientific knowledge,” writes Steven Shapin, a Harvard historian of science. But did the scientific method go too far —

beyond overthrowing ancient authority to suppressing Bruner's narrative – mode reasoning? And does the hegemony of the logico-scientific mode, particularly in the analysis of human behavior, restrict our view of the possibilities and problems for Aristotelian eudaimonia (happiness, flourishing)?

In a 22-paged single chapter titled “The case for widening,” Bhidé looks back at his voyage and contemplates future ones. He organizes the material examining uncertainty under themes such as deviations from normal patterns, interactions between technologies and discourses, and delegation to specialists. Bhidé begins with his Columbia colleagues Phelps and Elster, and damns mainstream economists with faint praise. I shall conclude this first part of my review with a question that Bhidé (2025, 334) poses after a discussion of issues raised by both T. S. Kuhn and David Kreps:

Per Kuhn, it also raises the collective productivity of economists and their scientific standing. Recall Stanford economist David Kreps's observation that a strong, cohesive paradigm has secured for his disciplinary colleagues exceptional prestige and incomes. Yet, might not a broader, weaker paradigm better serve the common good?

So much for copying out what Bhidé explicitly says – what remains is the implicit meaning regarding what he does not say.

Thus, I now turn away from Bhidé's voice to those of others including my own and furnish an outline. A final section summarizes why I have called upon various voices to articulate what U&E has meant for me. It follows a second part of my review, which itself consists of three parts: the first goes to the epistemological register to invoke Wittgenstein as a sacred text; the second to the dissonance between Bhidé's perspective on “mainstream theory” and the less original, and more conventional mainstream perspective economics has regarding itself, by invoking voices of Debreu, Samuelson and Myerson; the third section touches on a pedagogical/institutional register by invoking a decanal authority on the origin of the humanities and the very idea of a university.<sup>32</sup>

## II

I begin my struggle with this book yet again starting with the primary terms contained in the title itself: with uncertainty and enterprise, with

“ventures beyond the known,” and by asking myself how the “known” differs from the unknown. U&E concerns “uncertainty” and the “known,” and in his posthumous publication *On Certainty*, Wittgenstein (henceforth LW) uses the first word a total of eight times, four of them in Proposition 632 on the difference between “certain and uncertain memory.” Wittgenstein claims that if certain memory were not in general more reliable than uncertain memory, i.e., if it were not confirmed by further verification more often than uncertain memory was, then the expression of certainty and uncertainty would not have its present function in language (632). This claim is useful in that it insists that there be a gap in a claim and the negation of the claim: a gap between the “certain” and the “uncertain” and the “known” and the “unknown.” LW clarifies the distinction as follows:

The truth of my statements is the test of my understanding of these statements (80). That is to say: if I make certain false statements, it becomes uncertain whether I understand them (81).

After blurring the distinction between concrete error and general misunderstanding, LW elaborates:

If someone supposed that all our calculations were uncertain and that we could rely on none of them (justifying himself by saying that mistakes are always possible) perhaps we would say he was crazy. But can we say he is in error? Does he not just react differently? We rely on calculations, he doesn't; we are sure, he isn't (217).

I cannot be making a mistake about  $12 \times 12$  being 144. And now one cannot contrast mathematical certainty with the relative uncertainty of empirical propositions. For the mathematical proposition has been obtained by a series of actions that are in no way different from the actions of the rest of our lives, and are in the same degree liable to forgetfulness, oversight and illusion (651).

If, therefore, I doubt or am uncertain about this being my hand (in whatever sense), why not in that case about the meaning of these words as well? (456). Do I want to say, then, that certainty resides in the nature of the language-game? (457).

And so we have a claim that can be read as saying that error and misunderstanding, questions of misappropriation and misrepresentations, of expertise and trust, all reside in the language game. But let us turn from “uncertainty,” as is understood in the language game of one academic community, to consider how “knowing and knowledge” is

understood in the language game of a different, broader, non-academic community: from “mathematical certainty” and “relative uncertainty” to “certain knowledge” and to the “eye of certainty.”

Obsessed by maximization of self-interest // from birth to grave // you shall know, // to repeat, you shall know // instructed with certain knowledge // you will see torment // you will see with the eye of certainty // and you will then be asked.<sup>33</sup>

What do these lines mean? What do they understand laced as they are with cryptic ambiguity and lack of closure regarding what will be “known?”<sup>34</sup> I go back to LW and to where I also in part belong.

We just do not see how very specialized the use of “I know” is. For “I know” seems to describe a state of affairs which guarantees what is known, guarantees it as a fact. One always forgets the expression “I thought I knew.” That he does know takes some shewing. It needs to be *shewn* that no mistake was possible. Giving the assurance “I know” doesn’t suffice. For it is after all only an assurance that I can’t be making a mistake, and it needs to be *objectively* established that I am not making a mistake about *that*. The certainty is subjective, but not the knowledge.<sup>35</sup>

There are 78 instances of the word “predict” and its derivatives in U&E: these words are important for Bhidé’s ventures beyond the known. Let us see what LW’s *On Certainty* has to say regarding the term.

The squirrel does not infer by induction that it is going to need stores next winter as well. And no more do we need a law of induction to justify our actions or our predictions (287). Now what kind of sentence is “Nothing in the world ...”? It has the form of a prediction, but of course it is not one that is based on experience. Anyone who says, with Moore, that he knows that so and so ... gives the degree of certainty that something has for him. And it is important that this degree has a maximum value (384–86).

The idea of degree of certainty is surely an important idea in that it goes to the heart of probability theory.<sup>36</sup> But how does “predictability” relate to human experience and human conduct?

Now does *experience* teach us that in such-and-such circumstances people know this and that? Certainly, experience shews us that normally after so-and-so many days a man can find his way about a house he has been living in. Or even: experience teaches us that after such-and-such a period of training a man’s judgment is to be trusted. He must, experience tells us,

have learnt for so long in order to be able to make a correct prediction (434).

Let me conclude and sum up with the following:

You must bear in mind that the language-game is so to say something unpredictable. I mean: it is not based on grounds. It is not reasonable (or unreasonable) (559).

### *III(i)*

In Chapter 16's discussion of the "the evolution of dynamic bureaucracies," U&E has a subsection titled "Exclusions from Mainstream Economics." In it, we read:

The features and challenges of large organizations have become staples of management research and business education. Heterodox economic theories, such as evolutionary economics, also take many of these features seriously. But mainstream theories (chapters 6–7), which serve as my principal foil, exclude critical components of organizational designs — especially routines — along with the uncertain initiatives the organizations undertake (Bhidé 2025, 222).

In Section 1(ii-b), I read from Chapters 6 and 7 and noted how Bhidé, and I as a narrowly-trained mathematical economist, differed on our understanding of "mainstream economic theory." His is rooted in decision theory – how a "rational" economic agent copes with uncertainty – and in the economics of information. I approached the book with a prior on the mainstream totally orthogonal to his: I got misled by talk of "perfect" and "imperfect competition."<sup>37</sup>

In this little digression, primarily for the readers of *Critical Review*, let me spell out what a mainstream economist would understand to be mainstream. I begin with Debreu's 1985 address on "Theoretic Models: Mathematical Form and Economic Content" in which Debreu (1985, 1259) charted the "steady course on which mathematical economics has held for the past four decades," and noted how it was "marked by several major scientific accidents" and how it "sharply contrasts with its progress during the preceding century." In addition to accidents, Debreu talks of risk and gambles, words that surely pertain to uncertainty and enterprise. Debreu (1985, 1259) begins with Cournot as the first scholar he examines in his three brief case studies of such accidents.<sup>38</sup>

[It] occurred in 1838, at the beginning of that period, with the publication of Augustin Cournot's *Recherches sur les Principes Mathématiques de la Théorie des Richesses*. By its mathematical form and by its economic content, his book stands in splendid isolation in time; and in explaining its date historians of economic analysis in the first half of the nineteenth century must use a wide confidence interval. The University of Lausanne was responsible for two others of those accidents.

Debreu then moves on to discuss Walras and Pareto as the other two accidents or gambles:

When Leon Walras delivered his first professorial lecture there on December 16, 1870, he had held no previous academic appointment; he had published a novel and a short story but nothing on economic theory; and he was exactly 36. The risk that his university took – one that few universities represented here would now take – was vindicated by the appearance of the *Elements d'Economie Politique Pure* in 1874–77. For Vilfredo Pareto, who succeeded Walras in his chair in 1893, it was also a first academic appointment; like his predecessor he had not published anything on economic theory before; and he was 45. This second gamble of the University of Lausanne paid off when Pareto's *Cours d'Economie Politique* appeared in 1896–97, followed by his *Manuel d'Economie Politique* in 1909, and by the article *Economie Mathématique* in 1911.

But of course Bhidé's book is not a postwar history of mathematical economics: to the extent that Bhidé is interested in mathematics at all, he is more concerned with the mathematics of uncertainty and enterprise, a subject that itself no longer as important a part of the mainstream curriculum. But it is worth citing Debreu's understanding of uncertainty. In Chapter 7 of his magnum opus, *Theory of Value*, Debreu (1959) writes with obvious satisfaction:

The analysis is extended in this chapter to the case where uncertain events determine the consumption sets, the production sets, and the resources of the economy. A contract for the transfer of a commodity now specifies, in addition to its physical properties, its location and its date, an event on the occurrence of which the transfer is conditional. This new definition of a commodity allows one to obtain a theory of uncertainty free from any probability concept and formally identical with the theory of certainty developed in the preceding chapters.

These are surely words that need to be read repeatedly in order to be fully absorbed and internalized: a theory of uncertainty formally identical to a

theory of certainty, and one free of any probability concept.<sup>39</sup> It is no wonder that there is no reference to Debreu in U&E.<sup>40</sup>

### III(ii)

Gerard Debreu's *Theory of Value* has occupied a singular position in postwar neoclassical economic and financial theory: more than a benchmark, it dictated how modern economics should be written and done. To say that its style is orthogonal to Bhidé's would be an understatement: it stands also at an angle to Hayek, Hicks and von-Neumann-Morgenstern, and perhaps more to the point, to Samuelson's *Foundations of Economic Analysis*. Debreu has his prejudices which he does not conceal: probability theory, dynamics, game theory and imperfect competition.<sup>41</sup> If Debreu has no truck with uncertainty, enterprise, industrial organization, and innovation, the same cannot be said of Samuelson: unlike Debreu's hedgehog-like approach to the existence of Walrasian equilibrium, Samuelson is the fox of his time and there has not been a register in postwar economic and financial research that has not been touched by hand.<sup>42</sup> His 1969 tribute to Chamberlin has certainly not received the attention from the mainstream that it deserves, and I confine myself to some random remarks insofar as they pertain to U&E from my re-reading of it. Samuelson (1966, 18) begins thus:

No historian of science would be surprised to learn that Edward Chamberlin and Joan Robinson had written in the same year separate books that break definitively with the assumptions of perfect competition. Newton and Leibniz both discovered the calculus because that subject was then in the air, waiting to be discovered.

In a section titled "The Revolution Beckons," Samuelson writes: "In speaking of theories of monopolistic or imperfect competition as "revolutions," I know in advance that I shall provoke dissent. There are minds that by temperament will define away every proposed revolution."<sup>43</sup> But let me move on to Samuelson's larger historical vision.

The empty boxes that Clapham should have been asking to be filled in the 1920's were thus not the Marshallian categories of increasing, constant, and diminishing cost under competition. The empty boxes were those of market description and classification, involving all the possible patterns of oligopoly, monopoly, duopoly, differentiation of products with

numbers large and numbers small, and so forth. But Chamberlin had not yet created this new theoretical vision of the economic world.

As begets a student of market structures, Samuelson begins the first part of his *tour de force* by differentiating the product of Chamberlin from that of Robinson. Whereas Bhidé takes market structures to the information, Samuelson (1966, 43) takes it as a response to small numbers and non-convexity:

Because the convexity conditions of the modern formulations of competition are rarely met in real life, I propose in this section to state and prove some asymptotic theorems according to which we approach, in the limit as replicable numbers become indefinitely large, an approximation to the convexity conditions needed for competition.

This is an astounding statement. Rather than using large numbers to subdue the non-convexities for the benefit of Walrasian theory, as in Edgeworth, Farrell, Debreu, Scarf, Aumann, Brown and Robinson, Samuelson uses them to bring Walras closer to Cournot, to see game theory as an asymptotic implementation of Walrasian general equilibrium theory.

However, to those familiar with the history of sciences-how they develop, the role of new and altered modes of thinking in marking their growth, the role even of myth in the auto- biography of a science-revolutions are a useful way of describing accelerations in the path of growth. An old theory-or model; or, to use Kuhn's terminology, "paradigm" - is never killed off, as it should be, by a new set of facts. Being prisoners of their own Gestalts, scientists (like lovers) abandon an old theory only when they have found a new theory in which to clothe their beliefs. Chamberlin, Sraffa, Robinson, and their contemporaries have led economists into a new land from which their critics will never evict us.

Who then are the minds who refuse to see discontinuities and are the prisoners of the status-quo? If Koopmans (1957) was written for Milton Friedman, Samuelson is perhaps writing for George Stigler, perhaps thinking of Chamberlin versus Chicago.<sup>44</sup>

### III(iii)

In his 1957 classic essays on the "state of economic science," Koopmans (1957, 71) talks of institutions, and identifies one of the valorizing features of Walrasian general equilibrium theory as being institution-free.<sup>45</sup>

In the modern world largely the same fund of technological knowledge and experience is utilized under an amazing variety of institutional arrangements, ranging all the way from American corporate and individual enterprise to Soviet communism. [T]here are good reasons for starting with the construction of models of production possibilities before institutional assumptions are specified.

By 1974, Koopmans was already asking, along with Gary Becker, Harry Johnson and Vernon Smith whether “economic theory was with it?” The focus of research in mainstream theory had already shifted to the economics of information and thereby was on to the ascendancy of game theory.

In an important 1999 retrospective, Myerson assessed the intellectual revolution he believed had transformed economics.<sup>46</sup> Myerson (1999, 1067) identified “Nash’s theory of noncooperative games as a major turning point in the history of economic thought,” and saw it as “one of the outstanding intellectual advances of the 20th century ... comparable to that of the discovery of the DNA.” Disposing of Cournot’s 19th-century claims for priority, he also criticized Wilson’s “search for a consilient unification of social science with virtually no regard for the real unification that has been provided by non-cooperative game theory. But remaining with institutions, Myerson (1999, 1069) turned Koopmans on his head when he sees the signature of game theory not in its being institution-free but in its rootedness in institutions:

We recognize that the functional goal of social science is not just to predict human behavior in the abstract,<sup>47</sup> but to analyze social institutions and evaluate proposals for institutional reform. When our task is to look at potential flaws in a social institution, it can be very helpful to analyze an institution under the assumption that the agents in the institution are not themselves flawed. Otherwise, if we find that flawed individuals may come to grief in this institutional structure, we cannot say whether our finding is an argument for reform of the institution or an argument for better education of individuals. Thus economists have found it useful to assume a certain perfection of individuals, in order to see more clearly when social problems must be solved by institutional reform.

To be sure, there is a tendency even among the very best of us to give more significance to work that we do for our selves and our reputations in the particular community in which we find ourselves, and whose approval we seek. Thus even in 2014, the 1954 existence theorems of

Arrow-Debreu and of McKenzie were being sold as “post World War II transformation of economics around a central dogma — that a competitive market economy may possess a set of equilibrium prices. Telling the story behind the proof of the central theorem of economics sheds light on the changing nature of the scientific community and the critical connections between the personal and public rewards of scientific work.”<sup>48</sup>

#### IV

Names as synecdoches furnish representation for six out of the eight chapters of Part II of U&E; three out of nine do the same on Celenza’s location of the origin of the modern humanities in the Italian Renaissance: Valla on philology and emotion, Decembrio on losing your identity, and Descartes on forgetting philology. But it is really Chapters 5 and 6 on the pursuit of the love and shaping of knowledge by Poliziano and Crinitus that touch on this review. If Ghemawat and Mason on Cournot, and Leroy and Singell on Knight, are not as well known to mainstream Industrial Organization (IO) economist as they ought to, these names are totally alien. However before analyzing these authors’ ideas, consider Celenza’s (2021, 272) arguments regarding the modern and the mainstream, and on the importance of reading:

We are in the environment of “deep fakes,” wherein false but utterly life-like recordings can be made of politicians and other public actors and then spread with astonishing rapidity. How does one “read” that world, the world we are in now, where information comes at us constantly, across media hitherto unknown to human history? Moreover, we find ourselves in a quite urgent climate crisis.<sup>49</sup> Understanding how to react to this crisis is not a “science” problem. It is a reading problem, having to do with how people interpret evidence, which institutions they trust, and why. In all of these realms, false claims can now be spread with astonishing rapidity. The need to develop new and intentional habits of reading is more urgent than ever before.

What it is about the Italian renaissance that leads Celenza to include this in his intellectual history of the period 1400–1800, and why do I think it has such a strong resonance in the context of Bhidé’s book? It is what I had earlier referred to as U&E being written “against the grain,” and which Bhidé (2025, 261) describes as follows:<sup>50</sup>

It is a posture signaling the ability to place oneself outside of a culture within which one sits. It is a stance inherited from the anthropological glimmerings present in authors like Decembrio, who lamented his lost work on the religious practices of the ancients; and Crinitus, who gently apologized at the end of his *De honesta disciplina* for the time he spent in that work discussing ancient pagan religious practices, stressing that it had all been done in the service of scholarship.

An extended treatment of these questions is obviously out of place in this review but let me at least consider Celenza's three polarities in his concluding chapter titled "Echoes." In this chapter, Celenza defines three polarities as follows:

The polarities are those that had been suggested by Poliziano, his circle, and his method. They are threefold. First, collective versus individual: there is a need to conceive of knowledge as something that relies on collective work, work that is unaffiliated when it comes to institutions of any sort.

This notion sat next to the second polarity: open and infinite versus limited and finite.<sup>51</sup> We are finite. The discoverable world is infinite.

Then, finally, there was the third polarity: specialized versus comprehensive, a conflictual binary and one about which many fifteenth-century Italian thinkers spent time thinking, arguing, and writing (251).

From these polarities stem a way of thinking about the very function of the idea of a discipline and the university more generally. In asking the reasons for obtaining a Ph.D., Celenza's Chapter 5, on "pursuing a love of knowledge," – useless knowledge, so to speak – invokes Humboldt's "search for truth without conditions and with no practical end in view" (109).<sup>52</sup>

Poliziano's *Lamia* served to recapitulate debates that had begun in earnest in the Italian context with Petrarch in the fourteenth century. The discussion, at its core, was about institutions: their nature, function, and challenges over time. For many humanists (Poliziano was one of these), universities were too rigid, resistant both to new forms of knowledge and to new ways of expressing it. Yes, you need specialists to do deep research and push the frontiers of new knowledge. You also need constantly to find ways both of addressing what specialist researchers might be missing and of making sure that the results can be presented in different registers. Both of these trajectories – an endorsement of specialized research and a call to present it in wider-than-normal contexts – served

as meaningful lines of argument for Poliziano and his humanist predecessors. (252)

This is to inquire into the very idea of a university and its disciplinary partitions, and more to the point what would Kant, Humboldt and Cardinal Newman have thought of an “electronic university,” a university in cyberspace.<sup>53</sup> Moving on, I note that while it is common for students of the 18th-century to emphasize “virtues and manners,” Celenza (2021, 95-96) emphasizes “mood.”<sup>54</sup>

Recent thinkers, most compellingly Rita Felski, have discussed this notion of mood. The prevailing mood of a discipline accents and inflects our endeavors: the questions we ask, the texts we puzzle over, the styles of argument we are drawn to.

Celenza (2021, 271) defends his choice of thinkers he studies as follows:

My concern in highlighting the thinkers in this book is that the moods they inhabited were manifold. In the cases of Valla and Poliziano, we can detect an oscillation between two. First, there is that premodern sense of “philology as philosophy,” meaning a commitment to using the humanities as a way of shaping wiser selves and better societies. This mood reflects openness: openness to being changed by what we read and to the idea that what we read and write can change the world and ourselves within that world. Second, there are the boundary generating habits of modernity, which we could not discard even if we wanted to: Valla’s egocentric curation of his own extra-institutional identity and Poliziano’s taxonomic drive.

I too need to defend my choices in this review of a book on uncertainty and enterprise, and consequent ventures beyond the known, written by a Professor in a Business School? Why do I go to Celenza, himself a Dean of Arts and Sciences rather than of Business and Management? to LW ? and among the many economists in a bibliography of more than 20 pages, to Debreu, Samuelson and Myerson, and non-mentioned others?

✓

In this concluding section of my review, I take an introspective turn, and ask myself what is it about this text of four hundred pages that exercises such a hold on me? What does this discovered attunement tell me about myself, one who has been earning his livelihood in a university

economics department for over half a century, shuttling in an academic non-policy mode between the disciplines of economics, mathematics, and literary studies, a little lost between my identities as one or the other or of neither. One clearly cannot be a servant to all masters. As to why such a self-therapeutic indulgence be of the slightest interest for the general reader, I can only say that an answer possibly lies in the hope, perhaps forlorn, that my meanderings will give some tangential perspective on where the mainstream of the economics profession now stands and in seeing how it has come to the occupy the position that it does, the lessons for its future evolution.

I began this review of U&E by an initial, albeit cursory, reading of its chapters in the presence of an imagined reader of *Critical Review*, and then after rounding it off by some voices of mainstream economics, of Wittgenstein holding forth on the “certain and the known,” and finally a decanal voice locating the origin of the humanities in the Italian renaissance. After all this, I can distill a (provisional) punchline: U&E, in its essence, is a forceful argument, a willful disregard and a self-aware over-stepping, of the disciplinary boundary between the humanities and the social and mathematical sciences under the rubric of a more capacious conception of a university if one is to gain any understanding of the uncertainties of innovation and enterprise. If there is one lesson that one learns from this book, it is not so much a contribution to Knightian uncertainty – that it surely is – but that problems that call for attention do not come packaged in disciplinary boundaries, and institutional partitions, however self-serving those partitions may be to the institutional leaders. With this perspective as a background, I can say in the context of the extent to which to which U&E achieves the author’s aims, that it will/ought to occupy and orient the curricula of economics departs in arts and sciences as well as in business schools for some time to come.

#### DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author(s).

#### NOTES

1. This, and the subsequent three footnotes, all pertain to Rahman (2014). The sentence is taken from Chapter 12 titled “Henna Tattoo or Redundant and/or Superfluous.”

2. These sentences are from Chapter 11 titled “Twenty Questions or Failing to Credit Risk.” Since Bhidé and I have a lot to say critically of the economic mainstream, let me begin by accenting the positive, and by pointing the reader, especially that of *Critical Review*, to a selected sample of work included in my references that brings out how and analysis of narrative is saturating academic economics discourse; the reader has simply to track down the references that have the word “narrative” in their titles.
3. These two sentences are again from Chapter 11. Rahman (2014) continues: “It seems to me we see every adverse situation as a challenge to restore ourselves to the status quo ante. You know the refrain: I just want to go back to how things were. This seems shortsighted. How things were might well have led you to the way things have woefully become.”
4. Chapter 11. This chapter has the only two references to Wittgenstein in the novel: I shall have more to say on Wittgenstein in the sequel.
5. For an origin of the humanities in the Italian renaissance, see Celenza (2021). I shall have occasion to consider some sentences of his, three polarities, in the sequel.
6. This is from a letter written to Thomas E. Carroll dated May 15, 1982, and reprinted in Lyotard (1988) under the title “Answer to the Question, What is the Postmodern?” In addition to Lyotard (1992), also see Lyotard (1979). For a reference to the phrase “hermeneutics of suspicion,” see Felski (2015).
7. It continues the paragraph as follows: “However, it can be described as a set of critical, strategic and rhetorical practices employing concepts such as difference, repetition, the trace, the simulacrum, and hyperreality to destabilize other concepts such as presence, identity, historical progress, epistemic certainty, and the univocity of meaning.”
8. I use the term “reflexive” in the sense of Bourdieu-Locquant (1992); also see Bourdieu (1984).
9. I must confess that I am also inspired by Vendler’s 1998 book on Seamus Heaney: her chapter is titled “Anthropologies: Field Work.” Also see Footnote 50 below.
10. U&E touches many disciplines and many registers: it can also be read as an anthropological investigation. In the sequel, I shall be referring, in the context of Celenza’s polarities regarding scholarship in the Italian Renaissance, to “anthropological glimmerings in Decembrio and Crinitus. For the relevance of the anthropological register to Industrial Organization, and thereby to Part III of U&E in particular, see Schoenberger (1997) and its review in Bhagat (1998). Also Footnotes 9 above and 50 below. One master of the subject is of course Geertz; see his (1995) and (2000) musings on anthropology.
11. The author points out that this poem is in the collection in *Les Fleurs du Mal* published in 1857, and that the phrase “une outrage aux bonnes moeurs – or “morality” is due to an NPR program under the reference Gotrich (2018).
12. For the word “mainstream,” also see Footnote 14 below and the text it footnotes. Bewley’s papers, not cited here or in U&E, are now benchmark references to what the mainstream economics profession understands by “Knightian uncertainty.”
13. Numbers in brackets refer to the page numbers of U&E. In a remark to the image itself, Bhidé explains that he “sail[s] from Knight’s dock, not on Knight’s ship. Hence, Quai d’Knight.”
14. As we shall see in the sequel, the author has very much the mainstream of the economics profession in his sights: staying with the empirical, there are 36 instances of the use of the phrase “mainstream economics” and 100 instances of the word “mainstream.”

15. See Paul (1993) for an overview. In particular, he writes: "Thus, in contrast to deduction, abduction is as well as induction a form of "defeasible" inference, i.e., the formulae sanctioned are plausible and submitted to verification."
16. He continues, "My language and presentation favor nonacademic readers. Besides simplifying the technical material and using shaded boxes, I have put many details in the endnotes. I use bullet points, numbered sections, and other visual markers to make the chapter structures transparent. I also avoid long or made-up words, idiomatic references that might puzzle readers from outside the Anglosphere, and "maybes" and "perhapses" to qualify every argument (although I deeply mistrust certitudes)." He refers to the fact that "David Ogilvy's *Confessions of an Advertising Man* (1963) had numbered paragraphs, along with boxed articles," but that he has not "gone that far."
17. In Part V of Schumpeter's text, Knight and Keynes have extensive entries, but it is worth reminding the reader that it is an unfinished classic. Schumpeter (1954, 1136) writes on Keynes: "In Parts II, III, and IV, I have occasionally attempted to sketch personalities as personalities. This cannot be done in this brief survey. Therefore I shall merely add that the tribute above fails to convey a picture of the man or even the wealth of his interests. Even his purely scientific work will not enter our picture in all its aspects. I have described the words above as a tribute." However, Solow's (1994) take on Schumpeter is also worth keeping in mind: "Schumpeter is a sort of patron saint in this field. I may be alone in thinking that he should be treated like a patron saint: paraded around one day each year and more or less ignored the rest of the time."
18. "Quirks" is a keyword of the book, even though it occurs along four times (on pages 97, 177, and 180) along with "biases" and "nudges."
19. Reproduced in Goodwin's "The Patrons of Economics in a Time of Transformation." In addition to his Chapter 3 in Morgan-Rutherford (1998), see Backhouse's Chapter 4 "The transformation of US economics 1920-1960, Viewed Through a Survey in Terms of Journal Articles." Also see Footnote 17 above.
20. For the first, see Footnote 16 above. The word "deterministic" as opposed to stochastic, is another keyword of U&E and occurs five times (on pages 94, 269, 317 and 380.)
21. Phelps is an important interlocutor for Bhidé, and his name occurs 24 times in the book. I shall return in the sequel to this bifurcation in the economics of information, but this is presumably the reason why U&E has an extensive consideration of Leroy-Singell (1987) in this chapter. Hayek's 1933 inaugural lecture "Knowledge and Economics" has not received as much attention as his 1945 *American Economic Review* paper, "The Use of Knowledge in Society." The former can be read as a forceful critique of the so-called Arrow-Debreu-McKenzie before presented their findings to the profession; see Chapters II and IV in Hayek (1948) Also see Footnote 48 and the text it footnotes.
22. The author indulges the reader by citing Dobkin (2006) in one of his three footnotes to his elaboration.
23. As Ellsberg's ambiguity research suggests, even simple missing information can produce different (yet reasonable in the ordinary sense) psychological reactions ranging from affinity to aversion.
24. As part of his focus, the author invokes as in Keynes's (1937) examples of European wars and the seizures of private wealth.
25. Among these choices, the author includes the "mundane expansion of a "works" in Knight's archaic language, and notes them to be situationally unique "one-

- offs,” [and that] any reasonable choice must be undergirded by procedurally rational routine to evaluate such choices.”
26. The author notes that he has “studied more than a thousand cases over the last thirty-plus years, [yet] cannot and do not offer econometric validation for my generalizations.” In terms of methodology, he follows the “inference to the best explanation” approach implicit in Fama and Jensen’s papers rather than Sah and Stiglitz’s equilibrium models.
  27. The author has five references to Jerome Bruner – let me add Amsterdam-Bruner (2000). I hope to pursue these questions in future work in the light of my engagement with Oakeshott and “education as a commodity;” see Khan (1993). Also see Footnote 52.
  28. I have modified the author’s words on page 281 for fluency of expression, and leave it to the reader to check that I have not defaced them in any way.
  29. Kay and King, University College London, psychoanalyst David Tuckett, and a “Narrative Science Project” at the London School of Economics, think of narrative as a “general purpose technology” used to express scientific knowledge. There are also family resemblances here to the methodological reorientation pursued in Bewley (1999, 2025): his emphasis on the interviewer gaining the trust of the one being interviewed and the importance of allowing him or her to speak.
  30. Brunner (2000) and Amsterdam-Bruner (2000).
  31. It is clear that Harvard is a locale that has had a profound influence on the author; barring the abbreviations, and asking for the reader’s forbearance for dipping into digital humanities more than strictly necessary, the proper name “Harvard” finds mention 111 times.
  32. My views on this derive very much from Oakeshott (1989); see Khan (1993) on “education as a commodity.”
  33. My translation. For another out of several available, the reader may see the book reviewed by Robyn Creswell under the title: “Bewildered Rhapsodies: The Difficult History of Translating a Miraculous Text.” *New York Review of Books*, February 13, 2025.
  34. One text sacred to one community, out of several texts sacred to several communities talks of an individual’s life cycle motivated by nothing other than the maximizing of interest it sees as its own. It demurs, and asserts and asserts that one will soon know, know with the knowledge of certainty, see with the eye of certainty. But it is not explicit about what its that will be known, what one means by certainty. Among Bhidé’s extensive bibliography spread over 20 pages, there is no reference to Wittgenstein’s struggle with certainty.
  35. The first two sentences reproduce 11 and 12, and the next two, 14 and 15, all from Part 1; the last sentence is from 245 in Part 3. Throughout this essay, the italics are those of the individual author. There are 480 instances of the word *know* in “On Certainty.” As is well-known, the editors of Wittgenstein’s notes sectioned them into four parts with numbered paragraphs in each part.
  36. See Levi (1980) and its review in Hanna et al. (1983). Regarding the formalization of probability as a finitely-additive or a countably-additive measure, Fremlin writes in Chapter 27 of his treatise, “[T]here are some serious philosophical questions here, since probability theory, at least in its applied aspects, helps us to understand the material world outside mathematics. Probability theory includes more mathematics than can be easily encompassed in a lifetime.” Also see Footnote 41 below for Debreu on the application of probability theory to economics.

37. In terms of “perfect competition” now formalized as the Arrow-Debreu model, or as the Arrow-Debreu-McKenzie model in some Rochester and affiliated locales, Bhidé has only a single reference to Arrow, Hicks and Samuelson, though not to texts of theirs that a mainstream reader would expect and associate with their names. Leave alone, Walras, he has no reference to the pioneers of Walrasian equilibrium theory: Arrow, Debreu Debreu, Kuhn, Gale, McKenzie, Nikaido, Radner and Uzawa. As to Cournot, Bhidé identifies the 2002 historical account of then-HBS strategy professor, Ghemawat, and also considers Bain and Mason. The latter feature in Kuenne’s (1967) anthology that also includes Samuelson to be considered in the sequel.
38. It hardly needs emphasizing to the reader that it is the university institution that is taking the risk and the gamble in each of these accidents. Bhidé’s book is intimately involved with innovation in both commodities and in institutions. Also see Footnotes 52 and 53 below, and 32 above, and the texts they footnote.
39. Also see Fremlin on probability theory in Footnote 36 above.
40. For the general reader of our times (and especially one who is also a reader of *Critical Review*) wanting to know more of Debreu, Dütte (2010, 2012a, 2012b) and relevant chapters in Dütte-Weintraub (2014) are good entry points.
41. It is an interesting question for postwar economic theory as how the direction of subsequent research would have evolved had the 1958 text of Dorfman-Samuelson-Solow (DOSSO) occupied the position in top economics graduate programs that Debreu’s (1959) book did.
42. I do not cite the many editions of his undergraduate text, but do cite Samuelson (1947) and his seven-volumed *Collected Scientific Papers*.
43. On perfect competition see Stigler (1957) and entries in Durlauf-Blume (2008). Also the references in Footnote 37 above.
44. The reader is referred to Archibald (1961) and Stigler (1963) in connection with this speculative remark. I also note here that page numbers to Samuelson’s article are from Volume 3 of his *Collected Papers*. The reader may also find his reply to Grace on pp. 52–56 of interest. The original article was published in Kuenne (1967) which has tributes by Joe Bain and Ed Mason, both referred to in Bhidé’s chapter; and also pieces by Harry Johnson and Georgescu-Roegen.
45. On the university as an institution, the interested reader can see Footnotes 32 and 38 above, and Footnotes 52 and 53 below, as well as the sentences they footnote.
46. The reader can also see Myerson’s viewpoint in his (2007) textbook. A modern mainstream text of game theory is Maschler-Solan-Zamir (2020), and the Foreword and the Afterword of the sixtieth anniversary edition of the 1943 classic of von-Neumann and Morgenstern. The phrase “game theory” occurs only twice in U&E, and that too in connection with Ghemawat’s 2002 history. Also see Footnote 37 above to Ghemawat, and the reference to DOSSO in Footnote 41 below.
47. On “prediction,” see Section II above. On the theorizing of human conduct, see in particular Oakeshott (1974); also Khan (2003).
48. See Dütte-Weintraub (2014), especially the publisher’s and the reviewer’s blurb. A dissent to the accolades that leans to the other side of the pendulum, see Khan (2021). Footnote 40 is also relevant here.
49. On handling the crisis, Celenza (2021) writes: “And this must be emphasized: the natural science showing that human activity causes catastrophic climate change is about as settled as something this complicated can be, with widespread consensus among climate scientists about the major issues.”

50. See my emphasis on the anthropological register: the text footnoted by Footnotes 9 and 10 above.
51. Celenza singles out D'Alembert's vision. "[E]xpressed starkly, clearly, and with a tone of acceptance – as if the premise under discussion was inarguable – was that the cosmos and all it entails was infinite. All we could do was collect facts, marshal theories based on those facts, and update what we know as humanity learns ever more."
52. The institution of a university – the knowledge that is at stake in its conception, is very much a subtext of Bhidé's book. In addition to Celenza's (2021) book, the reader can follow up Oakeshott (1989), Lando (1996), Collini (2012), McCowan (2015) and their references. Also see Footnotes 32 and 38 above and Footnote 54 below.
53. I hope to pursue these questions in future work; in the meantime I send the reader to Bahti (1978) and to Lando (1992, 1993, 1996). The last is a commentary on Cardinal Newman's text reprinted in Newman (1996). Also see Footnote 27 above.
54. For the 18<sup>th</sup> century, the general reader can do worse than going to Becker (1932), Pocock (1971) and Hont-Ignatieff (1983). The word "mood" is used five times in Becker's book, but his first lecture is titled "Climates of opinion" which is not unrelated to "mood."

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